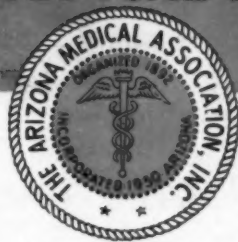


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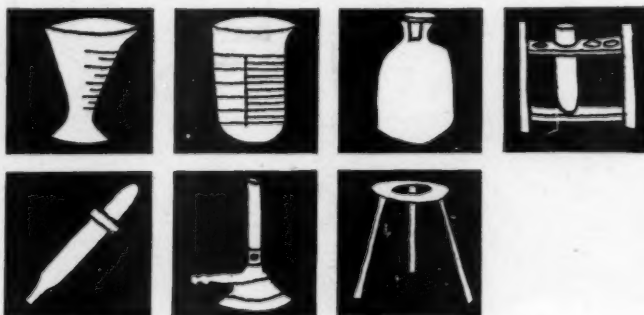
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1. Cook, M. H.; Free, A. H., and Giordano, A. S.: *Am. J. M. Technol.* 19:283, 1953.

2. Gray, C. H., and Millar, H. R.: *Brit. M. J.* 4824:1361 (June 20) 1953.

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*Heck, W.E.; Lynch, W.J., and Graves, H.L.: *Acta oto-laryng.* 43:416, 1953.

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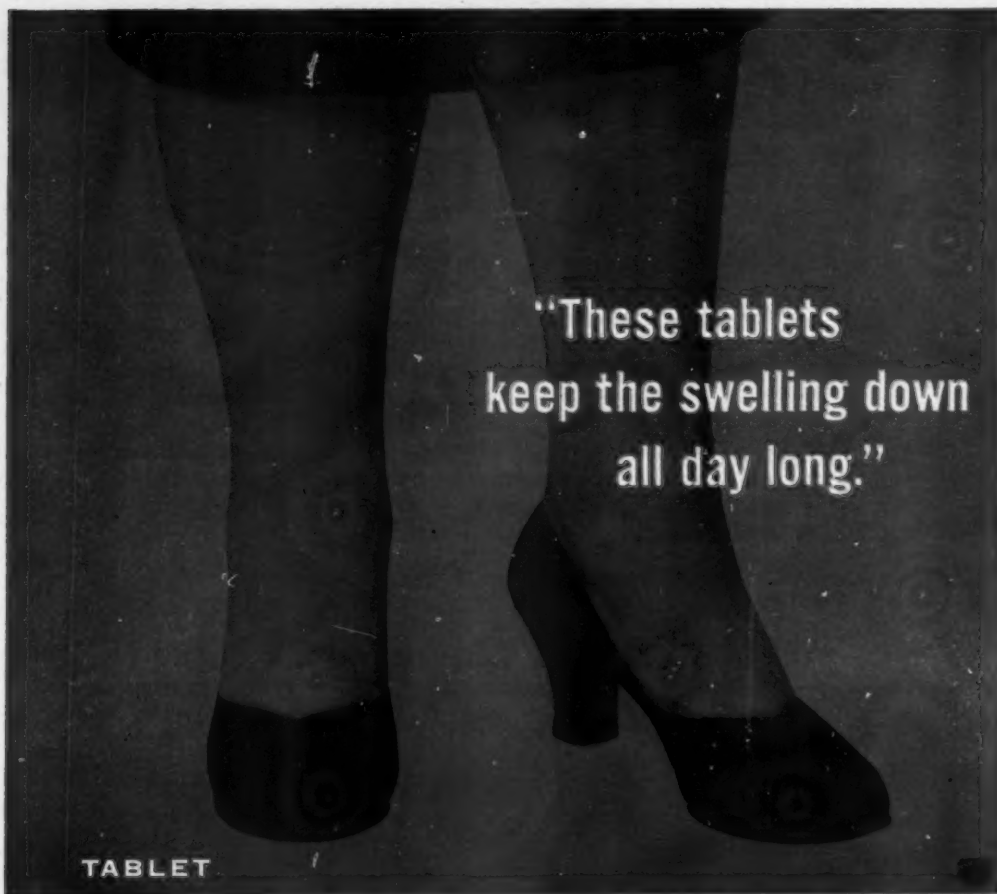
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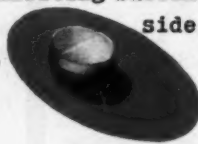
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Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 12, NO. 1



JANUARY, 1955

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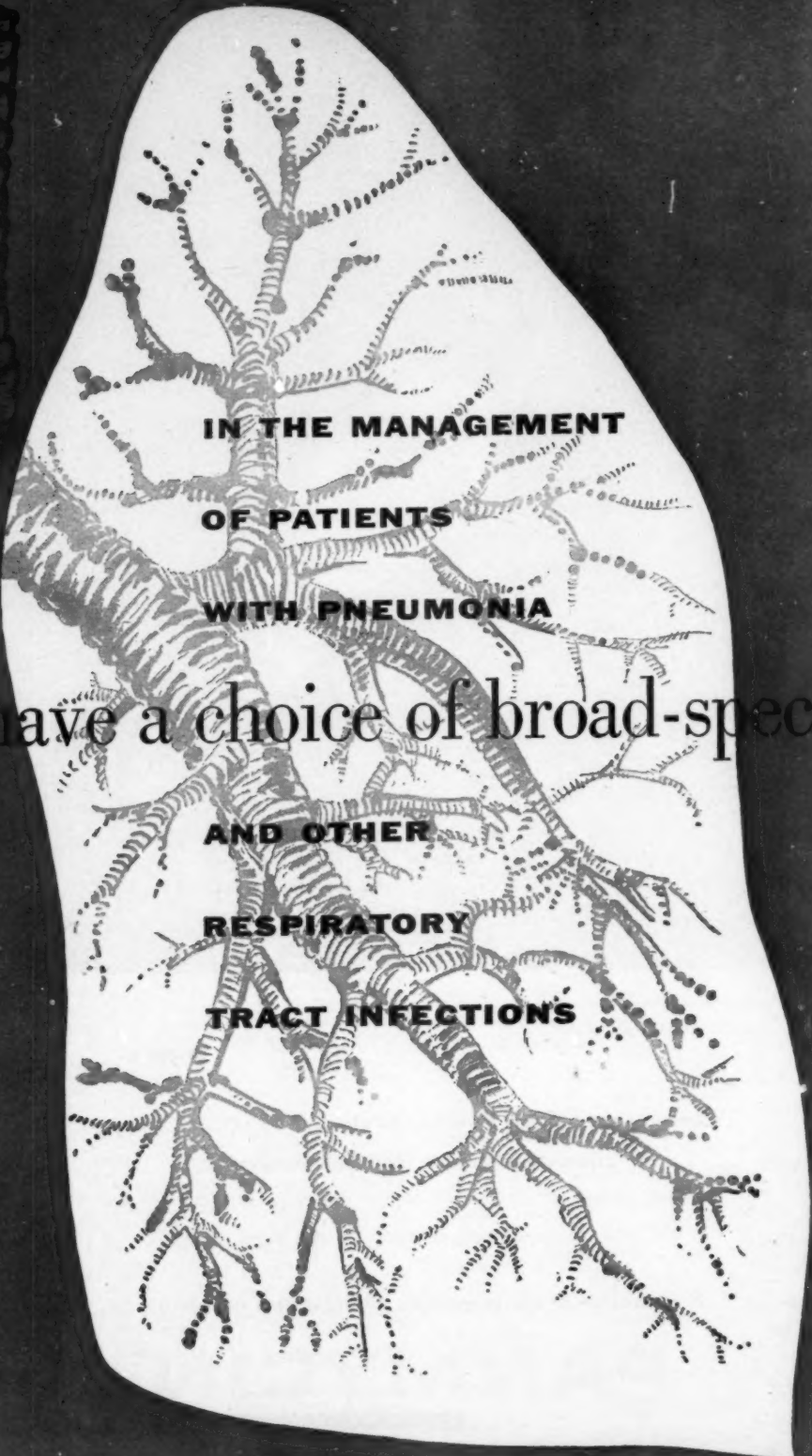
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1. O'Regan, C., and Schwarzer, S.: *J. Pediat.* 44:172 (Feb.) 1954.

2. Waddington, W. S.; Bergy, G. C.; Nielsen, R. L., and Kirby, W. M. M.: *Am. J. M. Sc.* 228:164 (Aug.) 1954.

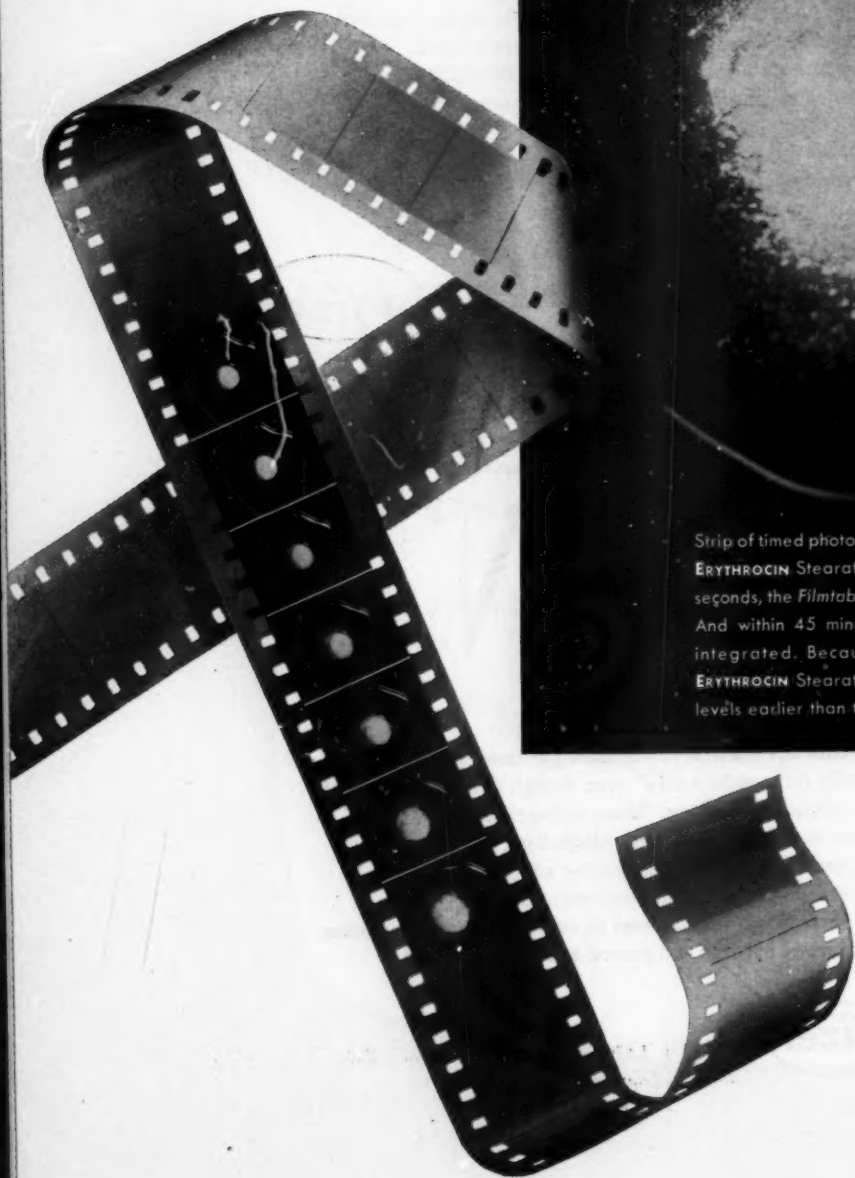


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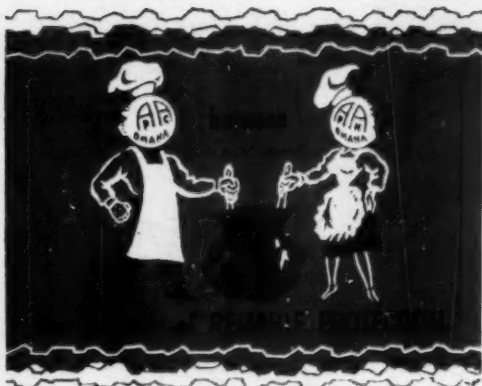
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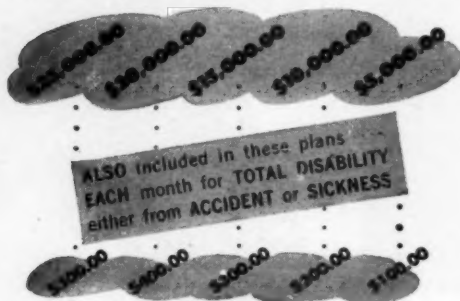
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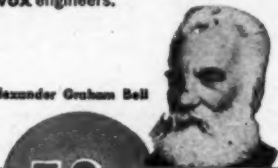


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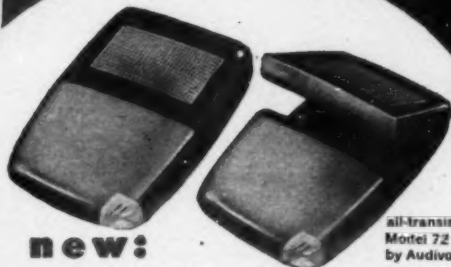
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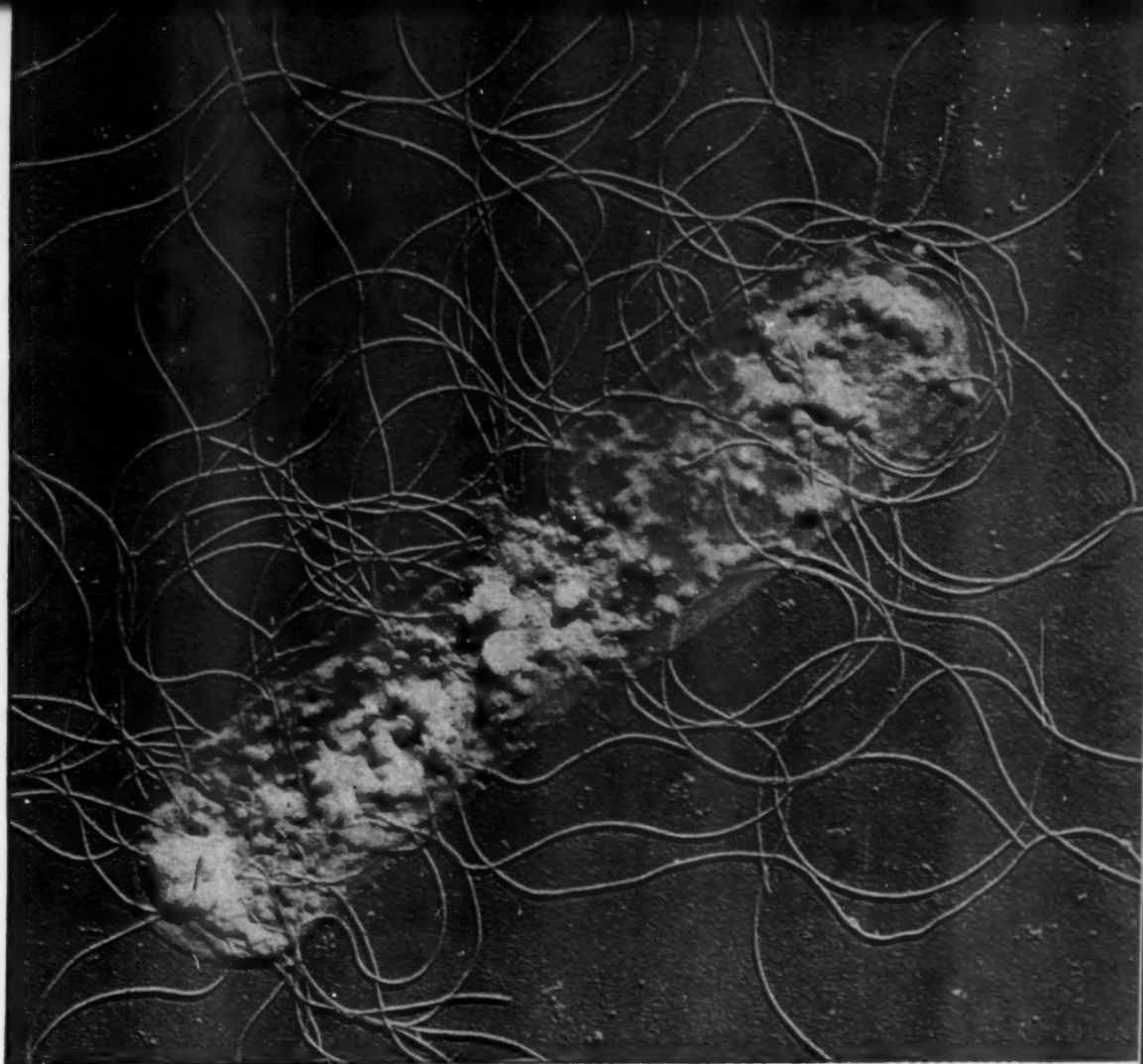
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According to criteria such as "physical activity, gastrointestinal structure and function, pathologic disturbances, and chemical balances," it is suggested that an optimal diet for the elderly patient should provide at least 20 per cent of its calories in the form of protein.³

For several reasons this high intake of protein appears desirable. Decreased activity in the aged tends to induce loss of tissue protein. Preservation of protein enzymes and of endocrinal harmony necessary for supporting anabolic processes requires adequate protein nutrition. Also, the aged person usually is able to handle the end products of protein metabolism satisfactorily.

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3. Freeman, J. T.: Clinical Correlations in Geriatric Nutrition, *J. Clin. Nutrition* 1:446 (Sept.-Oct.) 1953.

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ARIZONA MEDICINE

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Original ARTICLES

COCCIDIOIDOMYCOSIS*

J. Reichert, M.D.

Phoenix, Arizona

AMONG the various fungus systemic infections which afflict the animal body, great attention, extensive studies, and observations were made particularly of *coccidioides immitis*, reported by Rixford and Gilchrist in the U.S.A. in 1896 and also in other countries since 1892. In fact at this time it had already been reported by Wernicke and Posodas in Argentine, who observed skin lesions produced by *C. immitis*. According to them they were able to isolate a protozoan-like organism. It seems that Ophuls, Moffitts, and Ash were able to culture the fungus for the first time in 1900. Until about 1912 there were only about twenty-four cases reported in the literature; they were discussing particularly localized skin affections. For a quarter of a century no further progress was made and the entire investigation was completely dormant. In 1936 to 1938 extensive studies were made by J. Smith, Gifford, and Dickson who presented evidence that *C. immitis* was the etiologic factor in causing a definite disease entity. For some time they were able to isolate the fungus from infected cases present in the San Joaquin Valley of California.

The main endemic areas infested with *Coccidioidomycosis* have been found to be the southern parts of the San Joaquin Valley of California, southern Arizona, Nevada, Utah, parts of New Mexico, and the western and southern parts of Texas. There were cases reported from Argentina and Uruguay and the causative agent was found in the soil and to be endemic in the sub-

tropical climates, especially in the arid desert areas. Although there is not much information available from certain parts of the continent where medical attention is lacking or insufficient, such as in the extensive areas of Asia and Africa, this disease may be very common and appear particularly as a skin manifestation. There are cases reported from Italy, Southeastern Europe, Hawaii Islands, Chaco region of Argentina and from many other latitudes of both hemispheres.

As stated above, it was established that the causative agent, *C. immitis*, grows in the soil of the mentioned areas. It has both a sporogenic-parasitic phase in the animal and vegetative-saprophytic phase in the soil. The type of growth of the saprophytic phase is found on culture media producing a fluffy, cottony aspect of delicate branching hyphae which develops characteristic arthro-or-chlamydo-spores on Sabouraud's glucose agar medium at room temperature. (Fig. 1) This vegetative or saprophytic material of *C. immitis* with its spores are carried about for great distances by dust storms, valley and desert breezes, and lands on its hosts.

Once the spores take refuge in those subjects, they undergo the parasitic stage, forming characteristic spherules, with doubly refractile walls and filled with endospores. When the spherules become mature they rupture, spilling their contents, similar to the biological cycle of malaria. (Fig. 2) The liberated spores in turn will repeat to develop additional spherules, creating a chain reproduction. The spherule with its endospores, in its parasitic phase of *coccidioidomycosis*, does not transmit direct infection from

*Presented at a medical meeting in Tel-Aviv, October, 1953 at the invitation of the Israel Medical Association and read at the Memorial Hospital staff meeting, June, 1954.



FIG. 1:

Saprophytic phase of *Coccidioides immitis* as it is found on culture media producing a fluffy, cottony aspect, on Sabouraud's glucose agar medium at room temperature. The culture was obtained through the courtesy of Onie O. Williams, M.D., Phoenix, Arizona.

person to person and, therefore, it does not assume epidemic proportions. The saprophytic phase with its chlamydo-spores is highly infectious, having caused many laboratory contact infections as reported on different occasions. Contact infestation confirmation came from a case of a medical student who, nine days after handling a *C.* culture in Dixon's laboratory, developed typical symptoms of the disease. During World War II large training centers in the western states afforded great opportunity for investigation of transmission of the disease by epidemiologists, pathologists, and clinicians. The incubation period from direct contact infections is from nine days to two weeks. In *C.* Smith's laboratory, twenty-one persons showed positive skin tests. Most of the positive cases had no evidence of symptoms. The disseminated cultures containing arthro-spores often may cause very extensive infections. One of the most phenomenal occurrences was that *C.* infections took place in the second and third floors of a building in which *C. E.* Smith's laboratory oc-

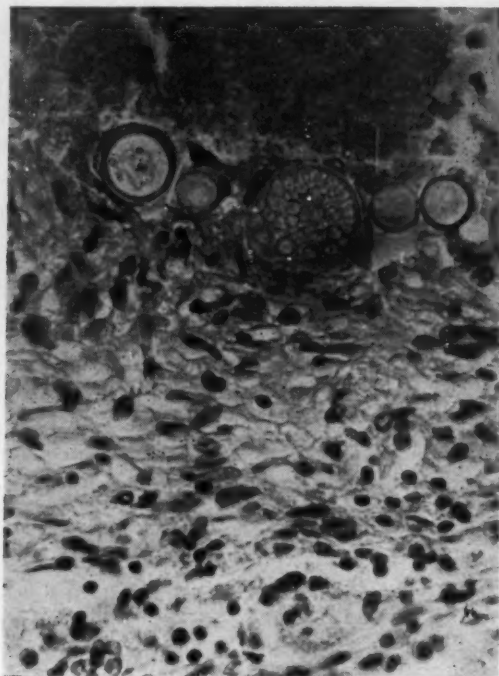


FIG. 2:

Brain tissue containing typical spherules filled with endospores. These spherules represent the parasitic stage of the spores which take refuge in the animal tissue. Once these spherules become mature they rupture, spilling their contents, similar to the biological cycle of malaria.

This case represents the fatal outcome of a disseminated form of coccidiomycosis with resulting coccidiomeningitis. The autopsy was performed on a 3 year old boy who was afflicted only several months before with a typical coccidio-pneumonitis.

The reproduction from a slide was obtained through the courtesy of: Fournier, Dudley T. Sr., M.D. Enlargement 1: 540

cupied the first floor, where extensive investigation of the fungus was made. (Fig. 9) Nevertheless, in spite of accumulated evidence some authors like D. T. Smith have stated that handling of such cultures are safe, if the loope used has been moistened with water. Following the above mentioned environmental infestation, E. C. Smith discontinued the open method of examining cultures, submitted for identification. In order to avoid additional infection. Actually there are designed ingenious protective cabinets in which cultures of spores can be handled with safety.

The disease of *C. immitis* is often named: "Valley Fever, Desert Fever, Desert Rheumatism, San Joaquin Fever". When the respiratory system is involved, *C.* is frequently confused with

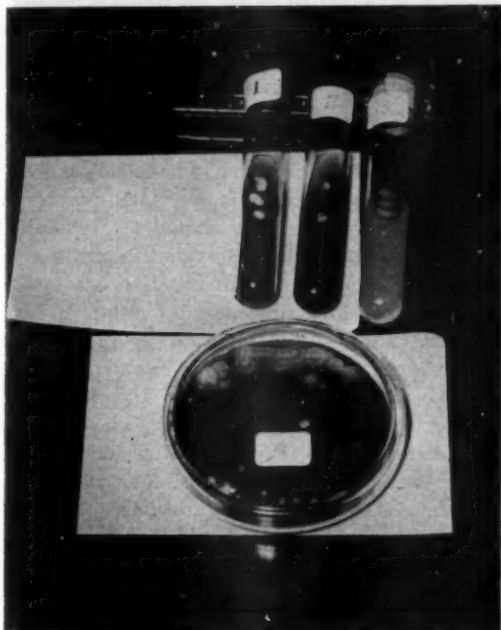


FIG. 9:

The upper three vials represent three cultures obtained of *Coccidio immitis* on Lipman Oxgall with 20 units of streptomycin at room temperature, after about 48 hours. Two of these specimens are on Sabouraud's glucose, cultured at room temperature. The Petri-dish growth was obtained on blood agar which, according to Gorczyca, is the most favorable medium for fast growths. All specimens are of 48 hours duration and it shows the differences of growth in the specified mediums. paring to the above.

These cultures were prepared by Leonard Gorczyca, B.C., Bact.

influenza or another respiratory infection. The medical profession is particularly interested in the incidence of the disease in human beings.

The respiratory apparatus is the usual portal of entry of the infection in human beings, cattle, sheep, dogs, rodents, and the crawling type of animal such as lizards. Following is a description of the course of the infection as it enters the lungs. Once the arthro-or-chlamydospores are inhaled they soon develop and grow into a spherule parasitic form, producing a pulmonary condition which is known as an acute benign respiratory disease and often also as a primary form of coccidiomycosis. In the majority of cases the infection is self-limited in the white race, but has a greater tendency among non-whites to develop in a systemic, progressive, disseminated, highly fatal disease. It is interesting that the primary infection takes place occasionally in skin abrasions. The initial stage

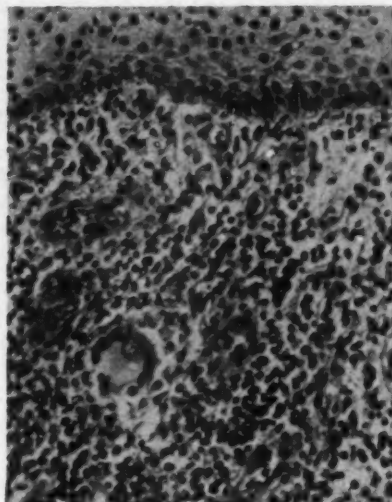


FIG. 5:

W. S., Male. Middle-aged. Dec. 1954. Still hospitalized. Disseminated Coccidioidomycosis. Skin lesions in the anal region, representing typical Cocci granulomas. It is possible to see typical spherules with endospores. One of them shows the rupture, in the process of spilling its endospore content.

This reproduction was obtained through the courtesy of Donald J. McNairy, M.D., Phoenix, Arizona. Enlargement 1: 360

of the infection becomes usually a self-limited process and seems to establish a permanent immunity. Often this is confused with seasonal respiratory ailments and appears as a sub-clinical entity. A primary infection may leave healed pulmonary lesions which are demonstrated by x-rays. They are in the form of glandular calcifications, cavitations, and nodular densities. The primary coccidioid infections are accompanied often by skin manifestations such as erythema nodosum or erythema multiforme.

The metastatic disseminated form of coccidiomycosis is due to anergy of the animal body to focalize and wall-off the invaded organisms. The septicemic-blood stream invasion, resulting from a disseminated form, involves the entire body and the highly differentiated tissues, with no exceptions, become defenseless to the invader and a high mortality rate is reported. There is, of course, a definite affinity and a positive chemo-taxis, as with all other germs, to prefer particular organs. On the other hand certain organs are known to be more appetizing to the spores during the stage of invasion. The priority in selecting certain tissues may also be due not so much to their particular preference as

to the tissue faculties and the amount and presence of immunity. The septic disseminated stage of the disease usually occurs sometime after the primary infection. It is believed that this condition is due to endogenous reinfection, through the vascular and lymphatic route. The metastatic form of the disease appears as a coccidoidal granuloma and the sites which are usually involved include meninges, skin, bones, joints, subcutaneous tissues, pericardium, lymph nodes, myocardium, kidneys, intestinal tract, uterus, fallopian tubes, and many other parts of the body. (Fig. 5) The results of the disseminated cases are lesions of typical granulomata, with similar clinical and histological behavior of T.B. These granulomas are often confused and indistinguishable from those seen in T. B.; they have the same epithelioid and giant cell formation and usually are surrounded by lymphocytes. The only difference from T. B. is the demonstration of coccidoidal spherules within the center of these lesions. So far as immunity or skin sensitivity are concerned, positive skin tests usually develop in three to twenty-one days and the results are recorded in 24-48 hours. Its appearance is usually similar to a delayed tuberculin like reaction. Once the sensitivity is established, the subject usually develops humoral evidence of contracted infection, which reveals the presence of anti-bodies and can be diagnosed through laboratory serological procedures, such as precipitin and complement fixation tests. The titre of the complement fixation depends upon the severity of the infection. Dilutions accepted as positive are 1:30 to 1:256 or higher. Precipitins develop earlier than complement fixation antibodies and are present often even in the primary stage of respiratory involvement. On the other hand, the complement fixation may never appear in the mild form of infection. Usually a falling titre indicates improvement or vice versa. Lesions like pulmonary cavitation, caused by C., frequently show a low titre and somehow this may be explainable because the fact that cavitation was established shows that the focalized infection, caused by C., was expelled through expectoration or otherwise and, therefore, probably deprived itself of its content which serves as an antigen to produce the necessary amount of antibodies. The size of the cavitation itself may not represent the original stereoscopic image of the granuloma or the amount of destroyed tissues. I am inclined to

believe that the extent of the cavitation is caused by a mechanical factor, such as the trapping of air. The precipitins which usually appear at the very early stage of the infection disappear sooner than does the complement fixation. In the disseminated cases, about 70% of skin tests are negative; however, when clinical evidence of C. dissemination is suspected, performance of the serological test should not be omitted since often antibodies were demonstrated in the body fluids in spite of negative skin tests. Another laboratory procedure of value is the sed rate and this was reported by practically all observers. The sed rate is elevated in the presence of disseminated cases and less frequently in pulmonary cavitation where it is found that 72% are normal and this follows the same pattern as complement fixation. A falling sed rate usually indicates improvement. Leucocytosis can go up to 26,000 and higher and differentials show a great incidence of eosinophilia, which is usually from 10 to 30%, as reported by many investigators; however, cases of unusual percentage up to 95% were reported. As the infection subsides, lymphocytosis predominates the W.B.C. and it usually is interpreted as indicating the arrest or subsidence of the infection. Meningitis, caused by C. immitis, shows a predominance of lymphocytes and total pleocytosis from 50 to 2000 cells. Other procedures including the gold curve, Kahn, and Wasserman do not aid in the diagnosis.

Important endemic areas in Arizona are around Tucson and Phoenix. In a ten month survey on cattle, 511 cases of coccidiomycosis were observed in and around Phoenix. 503 infections were encountered in adult cattle and calves. Most of the lesions were restricted to the thoracic cage with lympho-adenopathies. Animals which were placed in the local feed lots contracted the infection. Those coming from open ranges, and destined for immediate slaughter, did not reveal, after inspection, any adenopathic evidence of coccidiomycosis. In one particular feed lot in Phoenix, about 25% of the herd presented C. lesions but no sheep or hogs were infested in the same location. Several dogs, in Arizona and Texas, were reported as being infested. A dog which spent two years in northern Canada and was mated with one of his species from California became ill shortly thereafter and was accidentally killed a month later. An autopsy revealed that its central ner-

vous system was involved, containing spherules. The infection was also observed in a gorilla in the San Diego zoo. The animal died 45 days after the onset of the illness. An autopsy revealed granulomatous lesions with spherules involving the lungs, spleen, liver, and lymph nodes. The source of contamination was not exactly established but it was thought that some oat hay, which was used as bedding, may have been the vehicle. Oat hay grows in the vicinity of San Diego, California, and frequently contains soil particles. Occasional inoculation with *C. immitis* produced a localized infection at the traumatic site and the agent was found in regional lymph nodes; however, experimental intravenous injections of *C. immitis* in animals produced fatal results.

Autopsies performed in a number of hospital cases disclosed foci of pneumonic consolidation, similar to non-specific bacterial pneumonias. Often those focal areas were extensive, confluent, forming a consolidated gelatinous form. All these tissues had a characteristic microscopic appearance of wetness and hemorrhagic infiltration. Microscopically spherules with fibrin were numerous and polymorphonuclear leukocytes predominated. Necrosis was the outstanding feature found in pulmonary infiltration and it appeared in the intra-alveolar exudate and the surrounding pulmonary structures. It usually resembles early caseation in T. B. lesions. Frequently after some time, pulmonary infiltration becomes the predominating cause of ulcerative bronchitis and bronchiectatic dilation. The granulomatous focal lobular consolidation in the respiratory system usually resembles that of T. B. The involvement of organs in human bodies, as observed in 50 cases by Forbus, follows the following pattern: lungs, lymph nodes, spleen, skin, liver, kidneys, bones, meninges, adrenals, myocardium, brain pericardium, and pancreas. Peritonitis is rare and pericarditis is uncommon. Bone lesions are, as a rule, multiple and they are common in disseminated coccidiomycosis. (Fig. 6) The skeletal parts which become involved are the spine, pelvis, and extremities. In the long bones x-rays reveal lesions in both the metaphyseal and diaphyseal segments. In the short bones the diaphysis is usually affected. Marginal erosions of bones are often accompanied by soft tissue abscesses which calcify in the latter stages. Periosteal destructive lesions resembling osteomyelitis

appear in the hands and feet. Spina ventosa has often been reported as a complication of *C.* The non-whites are more susceptible to bone infiltrations, as stated previously. The syndrome of arthritis often occurs in the primary form but erythema nodosum seems to accompany this phase of so-called desert rheumatism.

The symptoms and the diagnosis are of particular interest to the clinician. There are three forms of coccidiomycosis which can be clinically diagnosed:

1. The asymptomatic primary infection.
2. Symptomatic primary infection.
 - a. Mild influenza-like respiratory disease.
 - b. More severe pneumonia-like disease.
3. Progressive disseminated disease characterized by coccidioid granulomas.

According to Dr. George E. Burch of Tulane University, the occurrence of asymptomatic infections is revealed by the fact that the positive skin reactors have no datable history of clinical disease, nor do the patients recall symptoms of any kind. According to his investigation about 60% of positive reactors appeared to have had unrecognized infections but others believe that 75% of the initial infections are subclinical with symptoms so mild that the cases

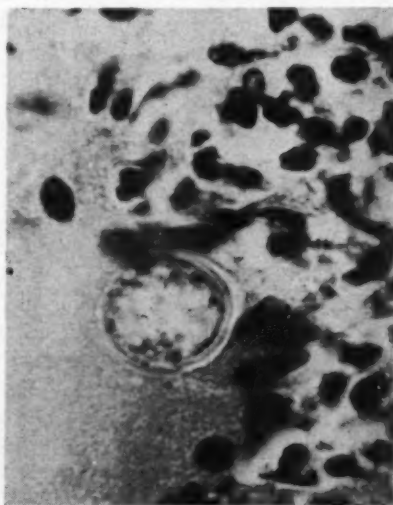


FIG. 6:

W. S., Male. Middle-aged. Dec. 1954. Still hospitalized. Disseminated Coccidioidomycosis. This micro-photograph of bone structure reveals a double walled spherule with its content of endospores in the bone tissue, almost in a phase of spilling its contents.

The reproduction of this lesion was obtained through the courtesy of Donald J. McNairy, M. D., Phoenix, Arizona.
Enlargement 1: 1800

are not diagnosed. Only about 25% developed illness of sufficient severity to be recognized clinically and will show roentgenographic changes within the lungs. The influenza-like primary respiratory infection is usually acute and presents a picture of fatigue, general malaise, and fairly constant pleural pain, fever, unproductive cough, and sometimes minimal hemoptysis. Chills are frequent and loss of weight in rather short periods of time is typical, in many cases as much as 30 pounds in a week. Often the patients have definite C. I. disturbances. A small number of cases develop erythema nodosum and it appears after onset of an acute form of the infection and is usually located in the shins, lateral surfaces of the thighs, knees, buttocks, arms, upper parts of the chest, and scalp. These skin manifestations are called in the San Joaquin Valley by the popular name of "bumps"; they do not fluctuate but are very tender and painful. In from 2 to 3 days these nodules turn purplish, fade, and brownish pigmentation remains after some time. Rarely does this erythema repeat itself spontaneously but it may be provoked and reappear with a skin test or with inhalation of the same antigen following dust storms. Often the appearance of erythema nodosum is accompanied by conjunctivitis and arthralgia. An increase of eosinophiles accompanies usually the skin manifestations. These eruptions are important symptoms and of diagnostic value and usually arouse the interest of the examining physician to suspect coccidiomycosis. During the erythematous period the skin tests are highly positive. Four hundred fifty three cases of erythema nodosum were tested and examined by Smith and it was found that 432 were positive, 11 were due to T. B., and 10 were undetermined. Skin eruptions are more prevalent in women than in men, despite the incidence of C. as a whole being four times greater in males. A reason for this high incidence in males is probably greater exposure. The non-white population seems to be less susceptible to skin manifestation but this is certainly questionable since it may not be visible because of their color.

The incidence of the disseminated form of C. is in the proportion of one to five hundred in the Caucasian type. There is, however, a much higher proportion in the colored population. This view is shared by many observers. The incidence among Mexicans of the disseminated

form is about $3\frac{1}{2}$ times as high as all other groups. The increase may be referred to the greater exposure of the poverty stricken average Mexican family and their inadequate primitive housing which exposes them to the soil. The Negro rate is about 14 times and the Filipino about 180 times as high when compared with the Caucasian type. The death rate follows the same racial and ethnic pattern as the incidence and is correspondingly 5, 23, and 192. Confirming conclusions were obtained from other observers on a series of 710 white patients with the result of 8 disseminated cases and 4 from 34 non-white persons. There is no question that some racial susceptibility is obvious from all the evidence of reports presented. From a medical ethno-geographic experience, it is known that the Filipinos were and are exposed to continuous exotic systemic infections and certainly it may have undermined their resistance and increased their susceptibility, explaining the high incidence and death rate.

Differential diagnostic difficulties which are encountered are the following diseases: T. B., Blast-Actino-Aspergillo- and Moniliosis which are often confused with C. The history, clinical picture, skin tests, and all other laboratory procedures mentioned may help to establish the correct diagnosis. A consistent and striking difference from T. B. is the rarity of intestinal involvement in C., which we so often observe in T. B.; simultaneous infection of C. and T. B. have been reported.

An elevated temperature, which subsides slowly and becomes normal by the end of the second week, accompanies usually an acute respiratory infection. Following the pyretic phase there is a period of lassitude and fatigue, in any respiratory infection. (Fig. 4) Information of past contacts, location of onset of the contracted respiratory infection, and a skin test should always become an essential part of the routine physical examination. Data concerning the location of onset of infection, despite its great distance from endemic areas, should not exclude the possibility of C. until laboratory and other means of investigation are exhausted. Distances are no longer barriers of transmission of infection, with the transportation facilities of modern times.

The technique of C. immitis skin test is similar to the Mantoux test, to be read in 36 to 48 hours. The skin test consists of injecting 0.1 c.c. of the material intradermally. Coccidioidin

is a preparation which consists of a 1:100 dilution of the filtrate obtained from a culture of 10 carefully selected strains of *Coccidioides immitis*, grown in a synthetic media which is a modification of that recommended for the preparation of tuberculin by the Bureau of Animal Industry. Before commercial release of this preparation for medicinal use, it is tested for potency on human subjects known to be sensitive, and the reaction compared with standard material. False reactions associated with histoplasmin sensitivity are increased when a strong concentration is used. The C. preparation comes in a solution of 1:100 and 1:1000. A 1:10 concentration is available for patients who show C. pulmonary cavities and frequently have a negative reaction to 1:100 material. A positive reaction consists of induration measuring 0.5 cm. or more. (Fig. 7) Immediately after the intradermal injection, a wheal and pseudopodes may appear but this does not seem to be of diagnostic significance. As in all other acute forms of septecemia, the subjects may fail to show a positive reaction. The same occurs often in miliary T. B. Persons with existing erythema should be tested with great precaution and with highly diluted solutions, otherwise we may aggravate a



FIG. 7:

R. C. L., white male, 32 years old, one month in Arizona, exposed to desert dust.

Strongly positive coccidiomycosis skin test after 24 hours.

Reaction was violent with tendency to vesiculation with severe edema of about one inch wide and $1\frac{1}{2}$ inch long with erythema of about $\frac{3}{4}$ inches around it. The positive skin test coincided with elevated fever, pain in the chest and left hilar adenopathy, perspirations, weakness.

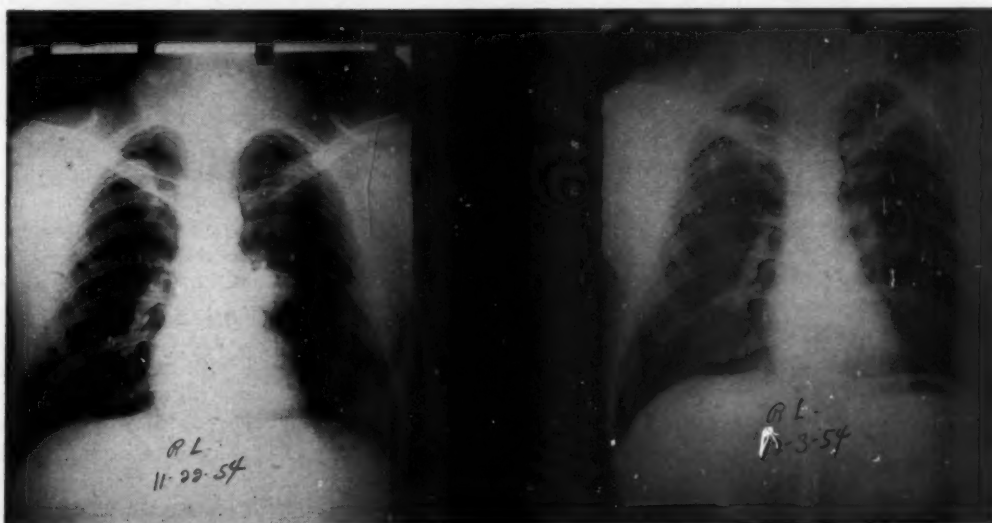


FIG. 4:

A. R. L., male, 32 years old, one month in Arizona. Acute hilar type of coccidiomycosis pneumonitis. Well circumscribed enlargement in the left mid-lung field indicates hilar adenopathy, consisting of engorged mediastinal glands.

Symptoms present: Elevated temperature, severe left chest pain, general malaise, profused perspiration, weakness. Laboratory examination revealed mod-

erate leukocytosis, and strongly positive skin test persisting for 2 weeks.

B. Same case 12 days later:

Increased hilar density on the left is almost disappeared, consistent with resolution of pneumonitis. Skin test still strongly positive. Clinical symptoms of pain, fever, malaise and sweats almost disappeared.

condition and have severe allergic systemic reactions. Sereological studies to demonstrate the presence of precipitins and complement fixation are of great value in the final diagnosis. Experience has shown that the serological tests are highly reliable.

The isolation of the agent (*C. immitis*) is not always necessary nor is it easy to demonstrate the specific factor. Body fluids, such as pus, sputum, and exudates, are usually the media where the cauative agent is found. The main x-ray findings are nodular; parenchymal lesions are usually situated in the mid-lung, less often in the lower lobes, and not too frequently in the apical and sub-clavicular regions. Cavities are frequent and, even when large, have a very thin wall. Bowman, Carter, and Jamieson, studying 35 such cases, found 11 were involving the upper, 15 the middle, and 9 the lower lung fields. In a similiar series of Smith's observations of cavities, 148 were in the upper and 64 in the lower part of the chest. The size of the cavities ranged from 1 to 8 cm. A feature which is of great importance in the diagnosis of cavitation is the absence of infiltration of surrounding tissues. Often the walls and the size of the cavity may be so fluctuant that ballooning due to air trapping was considered. (Fig. 8) Such cavitation may be present for many years with no discomfort for the patient and may rupture, collapse, or disappear by gradual shrinking. Many thoracic operations, such as lobectomies and localized resections, are being performed. Often repeated hemoptysis with the absence of other symptoms may make surgical removal necessary. The most conservative observers are of the opinion that the condition of the patient, even with cavitation, is good and that collapse can eventually be accomplished by conservative measures. There is, however, universal agreement that roentgen findings closely resemble T. B. In Jamieson's reports in a series of 21 cases, he noted persistent pneumonitis with extensive infiltrations of about $\frac{1}{4}$ of the lung fields. The clinical course, even in the presence of such extensive infiltration, is often asymptomatic and the cavities are cyst-like and thin walled.

In an extensive study on Coccidiomycosis in Cattle of Arizona by Charles J. Prechal, in 1948, a topographic map of Arizona is presented, showing locations from which affected cattle were transported. The majority of infested animals originated from the immediate vicinity of

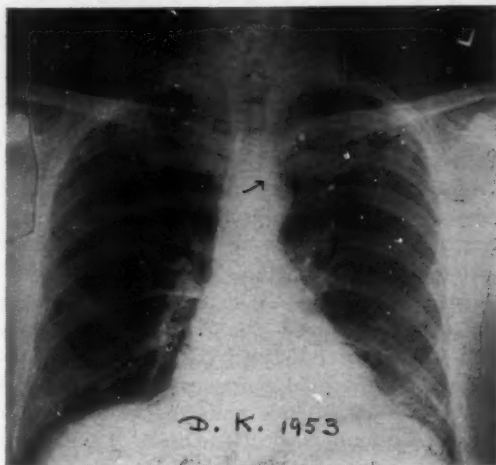


FIG. 8

D. K., White male, age 49. Large residual cavity upper left chest, close to left hilum. Note the thin wall. Size of cavity is probably maintained by sucking and trapping air, and is similar to a bubblegum-balloon with its transparent thin wall. Patient was admitted to the hospital in 1946 with the diagnosis of acute pneumonitis and possible lung abscess. In a period of a few days he developed several large cavities, containing exudate. Repeated sputum and culture examinations did not reveal T.B. Cultures however were positive for Friedlaender bacillus, and diagnosis was made of Friedlaender pneumonitis with cavitation. Studies through the years, repeated x-rays, the character of the thin walled cyst-like formation and the often applied skin test; and the greater knowledge and frequency of Coccidiomycosis and similar formation of cavities, indicates that patient probably had a severe form of coccidiopneumonitis with formation of cavities.

Phoenix, but it is not excluded that other areas may be equally contaminated. Few cattle are shipped from other sections of the state to Phoenix. The federal meat inspection service does not have jurisdiction over the entire state. Since clinical cases were reported from different parts of the state, it is logical to presume that the infection exists also among the animals. The author is of the opinion that the etiologic agent harbors in the soil and both human beings and animals are exposed to the same infestation through inhalation. The U. S. Army has extensive records of many positive skin tests, obtained during the war years in the arid parts of the state. The greatest number of cases hospitalized, according to information published in the Military Surgeon Journal of November, 1946, are originally from the Southwest. The Indians on the Papago reservation are equally susceptible to *C.* The Arizona health department conducted an extensive x-ray survey throughout the state. Dr. Prechal is of the opinion, after re-

viewing the results, that it would be indeed interesting to know how many of the so called declared positive are due to C. or T. B. Serology certainly would differentiate many, but such extensive laboratory procedures on a state-wide basis would involve difficulties. The lesions in cattle, as noted by the same observer, were found extensively, well marked, and the usual involved location was the bronchial and mediastinal lymph nodes. Post-mortem inspection of those animals showed lesions in the retro-pharyngeal, mediastinal, mesenteric — lymph nodes. (Fig. 3) Other organs attacked by the disease were tongue, lung, liver, as well as other parts of the body. The Hereford breed seems to be more susceptible than the others. Intravenous and subcutaneous inoculations, with material recovered from specific lesions in cattle, produced a miliary fatal infection in guinea pigs, rabbits,

and dogs. A postmortem survey made in 38, 195 animals, killed from October '46 to August, 1947, revealed the incidence of 503 cases. In offspring of the same breed, it was found that the proportion is much greater.

In a simultaneous survey of T. B. and C. and x-rays made among Phoenix grade school children by Dr. John Emmett, it was revealed that there was a high incidence of positive skin tests to C. immitis. The number of children observed was 1869 and the ages ranged from 5 to 17 years. There was no significant difference in sensitivity on the basis of sex or nationality; however, it was found to be greater with the increase of residence in Phoenix and vicinity. The dusty residential areas of the city revealed a higher incidence of sensitivity as compared to those living in paved areas. The same opinion and experience is shared by many other ob-



FIG. 3:

Mediastinal lymph gland and lung lesion from a cow. Animal was fattened in a Salt River Valley feed lot. Picture is about 1:1 reproduction. Primary lesion in area of tip of forceps.

This picture was obtained through the courtesy of H. Gilbert Crecelius, Ph.D., State Health Department, Phoenix, Arizona.

*Director of Laboratories.

servers. C. E. Smith, in a lengthy report, confirms that the reduction of positivity was achieved by dust control.

It is often difficult to establish a clinical differential diagnosis from Blastomycosis and Hystoplasmosis, a respiratory infection caused by *histoplasma capsulatum*. Hysto-Blastomycosis resemble each other and are usually endemic in the eastern and central states, just west of the Mississippi. Occasionally it is possible to demonstrate the etiological agent of hystoplasmosis and the existence of cross skin sensitivity is to be considered. Of great aid in establishing the correct diagnosis is the information obtained from the geographical location, negative Mantoux, presence of pulmonary calcifications, and specific complement fixation. Actinomycosis is another acute respiratory infection to be excluded but the identification of *Actinomyces bovis* establishes the diagnosis.

Treatment and management. Rest appears to be the most important part of the treatment. As in T. B. there is no pharmacological preparation that can compete with absolute bed rest. Sed rates and complement fixation should be performed periodically to serve as a guide to indicate progression or regression of the disease. Blood transfusions, high protein diets fortified by vitamins, and mental rest will contribute to the improvement and focalize the infection, and eventually diminish the incidence of dissemination. Antibiotics should be used carefully, if at all, since they may encourage its growth. Secondary respiratory infections are more safely treated by one of the soluble sulfa drugs. Innumerable substances have been used in the treatment of Valley Fever with good results. Medications used consist of Arsphenamine, crystal violet, gentian violet, thymol, antimony, potassium tartrate, and iodine. Streptomycin seems to have an inhibiting effect on the growth of *C. immitis* in a concentration of 30 U. per c. c. media. Penicillin seems to stimulate rather than inhibit the fungus. Streptomycin does not inhibit the growth of the fungus. Plumbagin, in 1:50,000, and bacillomycin, in 0.005 mgms. per c. c. of media, appears to have a fungistatic effect. Surgical procedures are performed on bone lesions and skin growths. Pulmonary collapse, resections, and lobectomies are indicated in severe uncontrolled hemorrhages caused by cavitation and granulomas. Actidione has been used clinically without steady favorable

results but there is indication that it may be of value in selected cases. This antibiotic was used in the disseminated form of meningitis but the lack of permeability of the meningeal coverings of the central nervous system may be responsible for its failure. Actidione has been shown to have fungistatic properties in vitro. My latest experience in a number of cases treated with Immune Globulin seems to be favorable. This recent clinical observation, however, needs further confirmation.

Summary. The incidence of *C.*, caused by *C. immitis*, was studied. The endemic areas were cited and it was established that the agent harbors in the soil and dust and is transmitted by inhalation and by direct contacts. The vegetative phase of the fungus in the soil and laboratory cultures are highly contagious. Main portal of entry is the respiratory system and the incidence is directly proportional to the number of dust controlled areas. The etiologic agent is not transmitted from man to man in the parasitic form, as it establishes itself as a disease entity in the animal body. Aspirated mycelia and immediate infestation of the environment through cough is an infectious hazard and this is probably erroneously interpreted as being transmissible from person to person. Skin tests are performed by a properly diluted solution and readings are similar to tuberculin. Precipitins and complement fixation are a part of the diagnostic armamentarium in the differential diagnosis. Cross sensitivities to hystoplasmosis, actinomycosis, blastomycosis, and other fungi infestations were considered. Anergic phenomena, similar to tuberculin, were reported. Animals and wild rodents affected in the infested areas may cause epidemics in new endemic areas. Pulmonary cavitation results frequently. These cavities are thin walled with no surrounding infiltration in contrast to T. B.

Surveys were made on a large scale in Phoenix grade schools and the incidence is in direct proportion to the dust areas. The disseminated form is highly increased in the non-white population. The native and intermarried racial groups, in the Phillipine Islands and Mexico, are more susceptible. Recommendation was made to include skin tests in the examination of all respiratory infections. Available treatment, consisting of bed rest, medication, general care, and surgical procedures, was described.

Acknowledgments. Grateful acknowledgment is made to Leslie B. Smith, M.D., D. W. Melick, M.D., C. Thomas Read, M.D., and S. S. Scholpp, M.D., for their courtesy of providing me with several films and case histories of their personal cases from the Phoenix area.

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DISCUSSION:

By Leslie B. Smith, M.D.

Given at Memorial Hospital on Coccidioidomycosis

Until 1936, we as doctors were not alerted or aware of the existence of this disease and its present prevalence. Actually, it was not until during World War II that we became conscious of its existence and its incidence in this particular area. It was Dr. Smith from California, whose extensive research work brought this disease to our attention, and I am sure that there are several in the audience here tonight who had the privilege of working with Dr. Smith during his investigation of Coccidioidomycosis in Arizona and California during the 1940's. It has already been mentioned this evening by Dr. Reichert, that this disease may simulate tuberculosis. I am reminded of a case which I saw back in 1938. This was a young, married woman in whom the x-ray's disclosed a very clean cut cavity in the right middle lobe. I tested her with everything which we knew at that time, trying to determine whether or not it was tuberculosis. She continued to hemorrhage from the cavity without proof of it being tuberculosis. It was the general, accepted, medical practice at that time, that any lesion in the lungs, particularly cavity lesion was tuberculosis, even though we were unable to definitely prove it by having positive sputum. I would like to reemphasize the fact that many cases of pulmonary lesions were treated as tuberculosis in this area without definite proof, hence, I am sure that there are numbers of people walking the streets of Phoenix today, who have been given extensive treatment for tuberculosis, including pneumothorax for many years, when actually, had we known about Coccidioidomycosis in those years, they would not have been subjected to the long, gruelling treatment which they received for probable tuberculosis. The young girl which I just mentioned above hence, was thought by me, to have tuberculosis and she was so told. I advised her to have pneumothorax but she refused to do so. I was so insistent that she take this form of treatment, that I told her that she would have to find herself another doctor unless she complied with the treatment I thought was best, and that was pneumothorax. About eight months subsequent to her last visit

to my office, she came in to inquire about the health of her husband. I persuaded her to let me fluoroscope her and have an x-ray made, and lo and behold, much to my surprise and chagrin, the cavity was completely gone and there was no residual disease in her lungs. Undoubtedly, this case mentioned was a case of unrecognized *Coccidiomycosis* and had she not been obstinate and refused to have "proper treatment" she would have gone through the long tedious task of trying to cure her disease with pneumothorax.

The early works on *Coccidiomycosis* had led us to believe that the disseminated form was invariably fatal, and it has not been until the last few years, that we have come to realize that only about 40% of white people who have the disseminated cocci actually die.

One of the cases presented by Dr. Reichert here this evening, was that of a truck driver who had disseminated *coccidiomycosis*. He was first thought to have Hodgkin's disease because of the mass of glands in his neck and the large gland which showed up in the hilum and mediastinum. However, a biopsy revealed that he had *coccidiomycosis*. At that time we were still under the impression that disseminated cocci was almost invariably fatal, hence, I told his family that nothing short of a miracle could save his life and that he was undoubtedly going to die. But, much to my surprise and the benefit of the patient, he is living and well today, without any residual evidence of the disease. The negro, however, is still very prone to die of the disseminated form of the disease. I am sure that all of us present here tonight, wish to thank Dr. Reichert for bringing this disease in its entirety by this symposium, to our attention, because it is something we all see in Phoenix every few days. In fact, it is so common here that we do not even go to the trouble of trying to prove its existence, but accept it on its clinical presenting symptoms. Again, I think we should thank Dr. Reichert for this very scholarly presentation.

By Howard M. Purcell Jr., M.D.

Coccidiomycosis in children may present either a mild self-limited pulmonary disease or a severe disseminated disease frequently ending fatally.

In an endemic area such as Arizona, the majority of local residents acquire *coccidiomycosis* infection as children; therefore "valley fever" or

"summer flu" is familiar to pediatricians. It is my impression that the mild cases produce less general symptoms (fever, lassitude, etc.) in children than in adults. However, erythema multiforme is a more common occurrence in children and its presence, particularly during the dusty months, always suggests *coccidiomycosis* to the pediatrician. A roentgenogram of the chest may reveal a parenchymal density, often in a "maple leaf" configuration. The intradermal test may be faintly positive by the time the infection is discovered, or it may not be positive until the test is repeated after several weeks have elapsed.

Therapy for the less severe cases is "supportive" and non-specific. My only suggestion is the administration of salicylates in dosage comparable to that given for the collagenous diseases (gr. i per lb. per 24 hrs.). This treatment usually results in a lowering of a fever if present, decreased malaise, and probably a shortened duration of the erythema multiforme if present.

In children, the fatal cases of *coccidiomycosis* are usually associated with meningitis. The clinical and spinal fluid findings are indistinguishable from those found with tuberculous meningitis, and only a positive culture for tuberculosis can reveal the true diagnosis before autopsy.

Contrary to the general impression, a large proportion of cases of disseminated *coccidiomycosis* recover. A report from the Kern County General Hospital(1) stated that in 21 cases of disseminated *coccidiomycosis* involving one or more bones, 19 recovered; the lesions healed spontaneously. One of the youngest patients to be reported was a 2 week old infant who was born during a dust storm. Pulmonary involvement was found at age 2 weeks, and at one month of age there was a bone lesion. This child recovered.

550 W. Thomas Road



DOG BITE AND ITS COMPLICATIONS

John S. Kruglick, M.D.
Phoenix, Arizona

THE treatment of dog bite or other potentially rabid animals, the use of rabies vaccine, rabies vaccine reaction and the treatment of this reaction are subjects which need clarification, particularly as to physician responsibility. Recently there has been much newspaper publicity on this subject. In the middle west a physician failed to give the rabies vaccine. The patient acquired rabies and died. Here in the west a physician gave the injections at the parents insistence. A vaccine reaction of an encephalitic type developed. Following a critical illness the patient recovered. In the first instance there was implied criticism in the newspaper for not giving the vaccine. In the latter instance there was implied criticism for having given the vaccine. These cases serve to emphasize the need for careful delineation of the physicians responsibility under all circumstances relating to the bite of a possibly rabid animal.

Alexander et al suggest that the dog bite be washed with tincture of green soap for five minutes and then it should be treated as any similar wound from a non bite source (debridement, suturing, etc.) the use of tetanus antitoxin is also recommended.

Blatt and Lepper(2) advocate the use of rabies vaccine in all bites about the neck and face. They suggest the full series of twenty-one injections under these conditions whether or not the dog is available. In bites on the trunk or extremities they give the fourteen (14) injections if the dog is not available. They report 2,193 persons immunized with an all over reaction rate of 0.7 percent and .3 percent central nervous system type reactions. Alexander(1) et al state that in bites about the neck, face and hands they give one or two injections of vaccine then observe the dog and continue the treatment only if the animal becomes rabid or runs away. They feel this is safe even in severe bites if combined with the new anti-rabies immune globulin recently developed by Kaprowski(3) and his co-workers at Lederle Laboratories. (This is a horse serum which produces an immediate rise in titer. It may be used in addition to the regular rabies vaccine but in its present status not to replace it.) Under these circumstances the number of reactions to the

vaccine is decreased many fold because as has been shown by Applebaum, Greenberg and Nelson(4) that reactions to the vaccine occurred five times more frequently in those receiving fourteen injections than in those receiving seven injections or less.

Lattimer, Webster and Gurdjian(5) report two cases of rabies vaccine reaction one of which expired and point up the fact that both had had previous rabies vaccine treatment. They report the brain pathology in the encephalitic type to consist of an adventitial infiltration of the cerebral vessels with round cells, a perivascular microglia reaction and infiltration of the Vagus nerve with segmented granulocytes. Alexander(1) et al feels the path of the virus is along the nerve paths to the central nervous system and back along the nerve paths to the salivary glands.

The cases reported above bring to light the possibility of the reaction being of an allergic nature. This is pin-pointed by Horack(6) who points out that by history practically every patient who has a rabies vaccine reaction is allergic. He quotes Swenther and Rivers in the Journal of Experimental Medicine in which they state that "brain tissue may function as a complete antigen capable of exciting the development of complement fixing antibodies which are organ rather than specie specific. This would point up the probability that the encephalomyelitis that follows rabies vaccinations is associated with development of specific antibodies for brain tissue." Pickar and Kramer(7) report a case of rabies vaccine reaction of the encephalitic type with a response to benedryl; a relapse on cessation of the drug and spectacular response to restarting of pyribenzamine. Blatt and Lepper(2) state that sixty percent of all patients receiving the vaccine develop a positive skin test and all patients developing a reaction develop a positive skin test. The test is done by diluting the vaccine 1:10 with saline and injecting 1/10 cc intracutaneously as in the tuberculin test. It is read in 24 hours. These same authors and Garrison(8) and many others report good results with the use of cortisone in rabies vaccine reactions. It would seem that it might be feasible to give the vaccine in con-

junction with cortisone but Alexander(1) et al believe that this would suppress the value of the vaccine. No opinion can be found relating to the use of antihistamines under similar circumstances.

Horach(6) states that in his series the reaction rates was one in 1200 or 0.083%. He outlines the types of reactions viz:

1. Delayed reactions of the tuberculin type.
2. Generalized urticaria.
3. Combines 1 and 2 plus constitutional symptoms with, headache, fever, etc.
4. Peripheral neuritic type.
5. Dorsal lumbar myelitis occurring in the 2nd or 3rd week of treatment.
6. Landry type ascending paralysis.
7. The encephalomyelitic type with hypertension, coma and choked disc. The latter two types are the most serious and one must watch them closely as one watches bulbar polio. The same type of treatment including a respirator and tracheotomy may become necessary. In all instances where a reaction seems imminent the treatment should be stopped if this is in keeping with good medical treatment, but if it must be continued Horach(6) suggests and outlines a course of desensitization.

A recent medical article for lay consumption depicts the use of the rabies vaccine as something horrible and compares it in severity to the actual disease. Appelbaum, Greenberg and Nelson(4) in their series state that 699 rabid animals were picked up in New York during the period covered by this survey. They bit 707 persons. All but eight took treatment. Six cases of rabies developed during this period only two had received anti rabies vaccine. Since rabies develops in 10% of all persons bitten by rabid animals 70 cases would have developed all of which would have been fatal. Treatment saved these lives. All of the forty-one cases that had rabies vaccine reactions of the central nervous system type recovered. The value of the judicious use of the vaccine immediately becomes obvious.

The case which precipitated this review of the literature and publishing of this report was first seen by us on June 2, 1954. The child a white male age 13 had been bitten by a dog two weeks prior. He was given a course of rabies vaccine at the parents insistence and at the 10th injection began to complain of slight headache. At the 11th injection he developed

a fever and projectile vomiting and the following day went into a coma. He was seen by us at this point. The temperature was 103°F. The patient was stuporous and failed to respond. He had a stiff neck, back and marked hamstring spasm. There was a left facial paralysis and paralysis of his bladder. His blood pressure was 180/100 and he had a two plus choking of optic discs.

Treatment consisted of the use of I. M. benadryl and cortisone plus symptomatic treatment such as fluids for hydration, suction for mucus, the usual measures for fever, and hypertonic solutions for his hypertention. At the end of the third day of treatment under this regime the fever dropped, the blood pressure came down, the mucus lessened and he was able to take food and fluids. He went on to an uneventful recovery regaining all his functions completely.

SUMMARY & CONCLUSIONS

1. Dog bites (or other animal bites) should be washed for five minutes with tincture of green soap and are then treated as the wound demands.

2. Bites about the neck, face or hands should be treated immediately. Five injections may be given and the dog observed. If the dog does not develop rabies or run away the vaccine may be discontinued. If the animal develops rabies 21 injections are given. (Total)

3. Severe bites of face, neck and hands should be treated as above using immune gamma globulin for rabies in addition.

4. Bites of the trunk and extremities should be treated only if the dog is not available for observation or if the observed animal becomes rabid. Fourteen injections are required for a complete course.

5. All dog bites should receive a tetanus booster.

6. Should any type of reaction occur the injections should be stopped. If this is not in keeping with good medical care desensitization should be done after Horach(6).

7. All patients with an allergic history should be watched particularly, and all patients previously treated with rabies vaccine should be skin tested for sensitivity as outlined in the text of this article.

8. The various types of reactions are described. The ascending Landry type and the

encephalomyelitic type are pinpointed as the serious types requiring close observation and a type of care akin to that given bulbar polio.

9. The use of anti histamines and cortisone is stressed as giving particularly good results in the serious type of reactions.

10. It is shown that contrary to some lay opinions and judicious use of rabies vaccine is good treatment. One must keep in mind that rabies is 100% fatal.

11. A case of rabies vaccine reaction of the encephalomyelitic type is reported which was successfully treated with anti histamines, cortisone and symptomatic treatment.

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MALIGNANT MELANOMA OF THE GALLBLADDER

Report of a case and review of the literature

Kent H. Thayer, M. D., O. O. Williams, M. D., and Doris Rowe, M. D.
Phoenix, Arizona

FOUR cases of malignant melanoma of the gallbladder have been reported in the literature to date. We wish to add a fifth case of melanoma in this unusual site.

Wieting and Hamdi(1), in 1907, described a primary melano-carcinoma of the gallbladder with metastases to the omentum, pelvic connective tissue and vertebrae. In 1931, Rosenthal(2) presented a primary malignant melanoma of the gallbladder with metastases to the brain, lungs, jejunum and kidney. Pautler and Gallavan(3), in 1951, reported melanomatous tumors found simultaneously at autopsy in gallbladder and brain and concluded that the primary source was in the meninges. Later in 1951, Madonick and Savitsky(4), in discussing the occurrence of hemorrhage in cerebral melanomas, described a case which showed a collection of melanin pigment in the gallbladder at surgery. The patient subsequently developed cerebral symptoms and melanin was found in the spinal fluid. No autopsy was performed on this case. Our patient, like that of Madonick and Savitsky, was subjected to cholecystectomy and subsequently died of melanomatous cerebral involvement.

Case Report

L. S., a 69-year-old white woman, was hospitalized on 10-14-52 because of acute upper abdominal distress, occipital headache, nausea and vomiting. This attack was superimposed upon a long history of indigestion, heart burn, bloating and intolerance to fatty foods. Ten days

prior to this last admission, she had been hospitalized for similar symptoms and at that time had numerous x-ray studies. Gallbladder x-rays were negative. A gastrointestinal series showed hyperactivity of the stomach and duodenum with a small, spastic, tender duodenal cap. A barium enema revealed numerous diverticuli along the lower descending colon and sigmoid. Chest x-rays disclosed a number of circular densities in both lung fields with a rather large lobulated density in the right perihilar region.

Physical examination on 10-14-52 revealed possible slight papilladema bilaterally and mild tenderness across the upper abdomen. Otherwise the examination was negative. A repeat chest x-ray showed no change in the previously mentioned nodular densities which were considered highly suspicious of metastatic malignancy. Laboratory findings were: negative urine, a CBC of 3.9 million rbc., 13.0 gm. hemoglobin, 11,400 wbc with 75% polys, 22% lymphs, 3% eosinophils and 6% non-filaments; no occult blood in stools.

Despite the chest x-ray findings, an exploratory laparotomy was done on 10-15-54 because of the patient's intractable vomiting and because of the insistence of the patient's relatives. A papillomatous mass was found within the gallbladder and a cholecystectomy was done. In addition to the gallbladder findings, a paraesophageal hernia, measuring four cm. in diameter, was found to extend about six cm. into the chest. Otherwise, the abdominal contents were completely negative. The patient did fairly well for

the first 12 hours, then suddenly became comatose. Her temperature rose to 102 degrees and her blood pressure, which preoperatively had been 160/85, climbed to 225/80. She expired on the following morning, about 24 hours after surgery.

Surgical and autopsy findings:

The gallbladder submitted to the laboratory measured seven x three cm. unopened. Upon opening the gallbladder it was found to have a papillomatous hemorrhagic growth, firm in consistency, but apparently infarcted. The wall in this area was slightly thickened and the serosal surface was puckered. The gallbladder otherwise was not remarkable. There were no stones found.

Microscopically the growth (Fig 1) was composed of varying-sized cells with somewhat hyperchromatic nuclei, some with prominent nucleoli and slightly basophilic abundant cytoplasm. They were epithelioid in character and contained a brownish-colored pigment. There were also many macrophages in the connective tissue containing a brownish-colored pigment which was negative for iron. A diagnosis of malignant melanoma of the gallbladder was made.

The autopsy findings consisted chiefly of metastatic nodules throughout the lungs and both adrenals. The nodules were dark in color and fairly friable. There was considerable congestion in the lungs present. Both the adrenals were enlarged and on sectioning there was found replacement of the medullary order of the adrenal by neoplastic tissue which was brownish in color. There was some extension of the growth into the cortical portion of the adrenal.

On opening the cranial cavity some edema was present. There was some flattening of the left side of the brain from pressure. A firm, irregular mass in the left temporoparietal region merged with dura. The leptomeninges likewise were adherent to the tumor but no infiltration into the lung was seen grossly. The mass measuring five x four cm. was not encapsulated and on sectioning had a firm grayish appearance with multiple areas of deep brown pigmentation.

Microscopically the growth (Fig. 2) was similar in all its metastases to that found in the surgically removed gallbladder. The nuclei were relatively large and epithelioid in character and

had a slightly basophilic cytoplasm. Mitotic figures were present but not numerous. In some

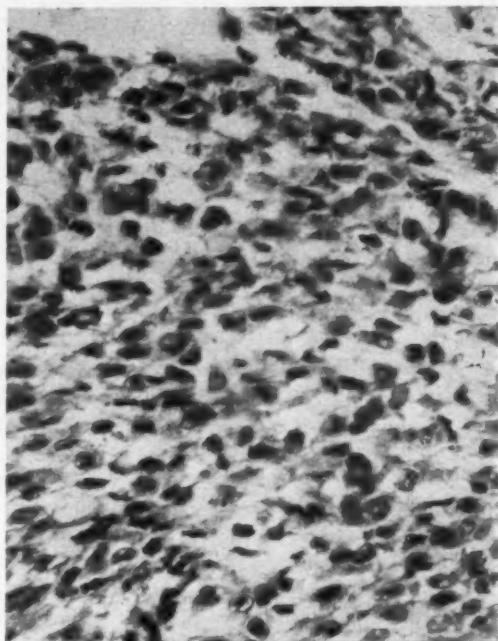


Fig. 1—Section (x3000) of gall bladder tumor showing varying-sized cells with hyperchromatic nuclei and prominent nucleoli.

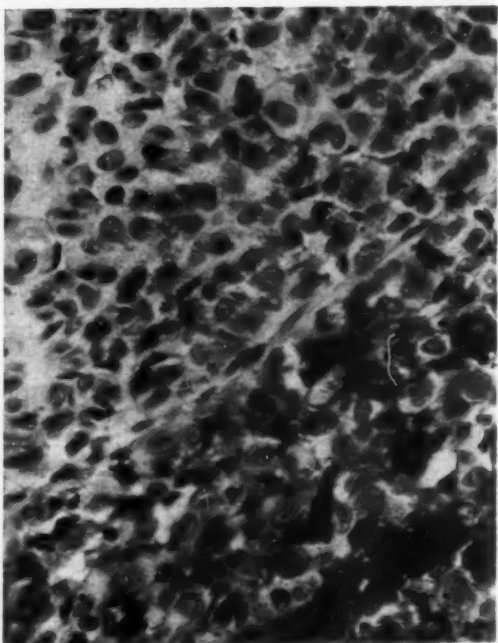


Fig. 2—Section of meningeal tumor (x3000) revealing cells with large nuclei and an occasional mitotic figure.

areas the tumor cells were flattened and had a somewhat fibrous appearance rather than the epithelioid character of the tumor found in the gallbladder. In the brain there was no invasion of the cerebral cortex.

Discussion

This patient had multiple foci of malignant melanoma involving gallbladder, adrenals, lungs and meninges. A survey of the skin at autopsy revealed no primary source of the tumor. Fundoscopic examination had been negative for evidence of tumor and the patient had complained of no eye symptoms. We were unable to elicit from the patient's relatives a history of any previous removal of a skin lesion.

Although it seems unusual to have gallbladder metastasis without coincident lymph node or liver involvement, we feel that the gallbladder tumor was metastatic rather than the primary source. Wieting and Hamdi and Rosenthal postulated squamous cell metaplasia in the gallbladder and thus gave an epithelial origin to their cases. However, we would prefer to adhere to the more widely accepted neurogenic theory of origin of melanoma. This latter theory was first suggested by Von Recklinghausen in 1882 and more recently has been supported by Ewing(5). Ewing states that the two most likely sources are (1) from nerve cells of the sensory end-organs (Meissner's corpuscles) as shown by Masson or (2) from a specific mesoblastic cell, the chromatophore. This cell was thought by Ribbert to originate very early in the embryo and to not be related to any other cell type. For rare melanomas of the internal organs, Ewing believes the most reasonable assumption is an origin from chromatophores in deep nerve structures.

A review of the literature reveals that next to skin, the meninges are the most common source of melanoma. Foot and Zeck have demonstrated nerve endings in the meninges similar to the Wagner-Meissner corpuscles. Also chromatophores have been found along the vessels of the pia and even in the brain tissue. So, with this in mind, we would select the meninges in our case as the most likely source of the malignancy. Three of the four previously reported cases of melanoma of the gallbladder had additional meningeal involvement. Wieting and Hamdi make no mention of nervous system involvement but do describe vertebral metastases. Nowhere else in the literature could we find

mention of bone metastasis. In fact, on several occasions, including Shapiro and Kellert(6), we found statements to the effect that when bony involvement occurs it is only through direct extension. We wonder, therefore, if Wieting and Hamdi's case did not have a neurogenic origin in the spinal cord. Russi, Robinson and Nagler(7) in their report of two cases of melanoma of the meninges, state that "melanin-bearing cells are normally found in the meninges over the spinal cord and in the recesses and sulci of the brain and cerebellum." If the case of Wieting and Hamdi did originate in the meninges of the spinal cord, then all five cases of malignant melanoma of the gallbladder could have been metastatic from a common source. We think that this is very probable because of the frequency of primary meningeal melanoma.

However, we must at least consider the adrenal as a possible site of origin. Maximow and Bloom(8) mention no nerve endings nor chromatophores in the gallbladder but do describe chromatophores in relation to the adrenals. Knisely and Baggenstoss(9), in 1946, reported a case of primary malignant melanoma of the adrenal and found eleven similar cases in their review of the literature. Autopsy showed their patient to have a large melanoma of the left adrenal with local lymph node involvement and distant metastases to the right adrenal, periureteral region and vertbrae, lungs, prostate and liver.

In 1947, Strong(10) reported a case of melanoma of the cerebellar meninges with amelanotic spread to the right adrenal, stomach, lymph nodes and skin. Madonick and Savitsky(4) include a case with widespread metastases including involvement of the right adrenal. Knisely and Baggenstoss discuss the various possibilities of histogenesis of the adrenal tumor and conclude that "the precise cell of origin in cases of cancerous melanoma of the adrenal gland is still in doubt." Ewing (5) also presents the various theories of derivation from adrenal cortex cells, pigmented ganglion cells of the medulla and wandering chromatophores in the connective tissue about the adrenal. Ewing would favor either the nerve cells or chromatophores.

Summary

A case of malignant melanoma involving gallbladder, meninges, adrenal and lungs is reported. From a review of the literature, the authors con-

clude that the primary site was probably in the meninges, although an adrenal origin cannot be ruled out.

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A MEDICAL SCHOOL FOR ARIZONA?

Dermont W. Melick, M.D.*

Phoenix, Arizona

INTRODUCTION

IF we understand immediately that a medical school does not mean one separate and distinct building, but a group of buildings with inter-related activities, then we have a basis for understanding and deliberation.

POPULATION & FINANCIAL OBLIGATION

There are some individuals who would have the state of Arizona establish a medical school immediately. These individuals evidently presume that the legislature would look with favor on such a project. Even if we conceded that Arizona was ready for a medical school, would not this first hurdle of convincing the legislature be a most formidable one?

Let me relate to you the requirements for a medical school, and you determine whether or not we are ready for it. In the first place, consider population. Doctor H. G. Weiskotton of Syracuse, New York, who knows more about these requirements than anyone else, wrote me to the effect that a medical school should not be undertaken unless there is a surrounding population of two million people to support such an endeavor. Arizona does not have such a population. We as yet cannot boast even one-half that population. One might ask when Arizona may be expected to have such a population. The consensus of opinion indicates that Arizona may have a population of two million by 1980. It is true there are three Western states who have medical schools, and in each of these states the population is less than two million. For instance, Utah has a population of 688,000, Oregon 1,521,000 and Colorado 1,325,000. From this you might conclude that a population of two million is not an absolute essential. It may not be an essential, but we should also inquire if these states are suffering

a financial burden as a result of their medical schools. In order to find this out, I wrote to the governors of Utah and Oregon. Governor Bracken Lee of Utah answered: "The people of the state of Utah devote a higher percentage of their personal income for the support of higher education than the people in any other state in the union. A part of this high expenditure can be attributed to the fact that we are supporting a medical school, but it derives chiefly from the fact that we have seven state-supported institutions of higher learning, and only three privately supported. The national ratio is two private institutions for each public institution; so you can see we begin at quite a disadvantage." Governor Patterson of Oregon answered: "We feel that Oregon is supporting its medical school without an undue financial burden on the state and the level of support has been sufficient to maintain a high quality program. It seems questionable whether population alone should be the basis for determining whether or not a state can support a medical school for there are other factors which must influence this decision."

Probably the most important determining factor has to do with the wealth of a state. We must concern ourselves with how much capital outlay is necessary in order to build a medical school. After we have the medical school as a physical reality, how much will it cost to maintain it? Sixteen million dollars (\$16,000,000) is a fair estimate as to the cost of building a medical school. Thereafter, it will cost one million five hundred thousand dollars (\$1,500,000) per year to maintain it. This can be supported by giving you an example from one of the schools previously mentioned. The University of Oregon has a physical plant that represents an investment of fourteen million dollars (\$14,000,000). This includes a new teach-

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*Secretary, Arizona Commission Western Interstate Commission for Higher Education.

ing hospital at a cost of six million five hundred thousand dollars (\$6,500,000). The operating budget for the year 1953-1954 is one million three hundred thousand dollars (\$1,300,000). This amount is for the medical school proper. When the outpatient clinic and the university hospital are included, the operating budget becomes two million dollars (\$2,000,000) a year. If an established medical school in this area is known to cost fourteen million dollars (\$14,000,000), and must expend two million dollars (\$2,000,000) to maintain it per year, it is probable that a similar school in the state of Arizona would not cost less. Doctor John Z. Bowers, Dean of the University of Utah School of Medicine was asked to comment on this problem, and his reply follows:

"A real problem for any new medical school relates to the procurement of faculty. It is fair to say that in these days qualified medical scientists who are interested in academic careers are not numerous in most fields. Decisions on positions are made with consideration of possible salary, availability of outstanding facilities and opportunities for association with other leading medical scientists. A number of state medical schools and private schools are finding faculty problems really tough — particularly in Anatomy, Physiology, Pathology, Radiology and Psychiatry.

"I have real reservations about the value of a two-year medical school. As you are aware, the general pattern in the country is to convert two-year schools to four-year schools — examples are North Carolina, Missouri and Mississippi. It is difficult to get a competent faculty at a two-year school and medical education is something that is no longer segmented into preclinical and clinical areas. It is essential that a heavy dose of clinical medicine and clinical attitude be adopted for the first two years.

"Personally, I feel that with the development of the Western Interstate Commission for Higher Education, there will be ample opportunities for medical education for qualified students from your state. Thus, the expenditures for a medical school would hardly seem justified."

Let us go one step further, however, and try to project into the future the most desirable time to start planning for such a school. Let us presume that Arizona reaches a population of 1,500,000 by 1970. Let us also presume that

by 1970 Arizona can afford \$16,000,000 for a physical plant, and \$1,500,000 yearly to maintain it. Such being the case, a bill must be introduced in the legislature so state funds can be used to finance this project. It might be possible for the legislature to enact such a bill no later than 1975. It will thereafter take three years to construct the physical plant. Certainly it will take that long to select the faculty. The medical school might be ready for its freshman class in September of 1978. If our previous thought about the population of Arizona reaching two million by 1980 still holds true, then the opening of the medical school in 1978 would approximate all of the necessary requirements for a successful school.

HELP FOR THE MEDICAL STUDENT AT THE PRESENT TIME

If a medical school for Arizona must of necessity be postponed, what alternative do we have to offer now? My purpose in these opening remarks has been to set the stage so I can call to your attention present efforts to do something about medical, dental, and veterinary education. My remarks will be directed to medical education primarily. These remarks are equally applicable to dental and veterinary education. The state of Arizona recognizes an obligation to a certain group of students who cannot obtain the training they desire at home. The Western Interstate Commission for Higher Education is therefore helping these students realize their ambition. This commission has no program to "sell". The commission came into being to provide a device through which the states can do planning and undertake action in the field of higher education, in the important years ahead. The purposes of the commission are clearly stated in Article I of the Western Interstate Compact for Higher Education.

WHEREAS, the future of this nation and of the Western States is dependent upon the ability of the education of its youth; and WHEREAS, many of the Western States do not individually have enough numbers of potential students to warrant the establishment and maintenance within their borders of adequate facilities in all the essential fields of technical, professional, and graduate training, nor do all the states have the financial ability to furnish within their borders institutions capable of pro-

viding acceptable standards of training in all fields mentioned above; and WHEREAS, it is believed that the Western States, or groups of such states within the region cooperatively can provide acceptable and efficient educational facilities to meet the needs of the region and of the students thereof; now

THEREFORE, the state and territories do hereby covenant and agree to carry out the aims of this compact.

This compact is now in operation, Arizona, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, and Wyoming. The remaining states and territories, California, Washington, Nevada, Alaska and Hawaii, have not taken action on the compact as yet.

A specific example of the compact in action is as follows: Arizona is sending some of its medical students to the University of Colorado. The tuition for a Colorado resident is six hundred fifty-five dollars (\$655.00). The tuition for an Arizona resident is two thousand six hundred and fifty-five dollars (\$2,655.00). The state of Arizona now pays the University of Colorado two thousand dollars (\$2,000.00) per year per medical student. The student is thereby not penalized for being an Arizona resident. Please be aware of the fact the student still has to pay the regular tuition fee of six hundred and fifty-five dollars (\$655.00). Similar plans are available to dental and veterinary students. The state of Arizona provides sixteen hundred dollars (\$1,600.00) per year for each dental student, and twelve hundred dollars (\$1,200.00) per year for each veterinary student.

Complete understanding as to the method of subsidizing these students is most important. I would like to emphasize the next sentence as forcibly as possible. This is not a giveaway program. A student must agree to abide by certain stipulations before he becomes eligible for the subsidy. He is required to sign a contract with the state of Arizona where he agrees to repay the subsidy either in services or cash. For each year his tuition is paid, he must agree to practice two years within the state of Arizona in order to repay that obligation. If the student decides not to return to Arizona to practice, he must then repay all the money expended in his behalf. He also must pay an interest rate of four per cent on this money. In reality, therefore, this program is a loan and must be

paid by one of the two methods outlined above. The foregoing should quiet any fears about this being a giveaway program.

Of note, too, under this program is the fact that the participating schools will give students from Arizona a priority for admission. This is important to those Arizona students who despite recognized scholastic ability cannot find openings in professional schools. This priority is not an absolute guarantee that the Arizona student will be admitted to the professional school. The scholastic requirements of medical, dental, and veterinary schools are difficult to meet. Neither the states nor the schools participating in this compact are interested in educating mediocre students. Each professional school must determine which students are acceptable. The University of Oregon this past year made six places available to the state of Arizona for dental students. Eight students sent in their applications. After reviewing the scholastic records of these eight individuals, only two of the eight met the high standards of the University of Oregon. Despite the fact that six places were available, and despite the fact that eight Arizona students expressed desire to be dentists, only two were allowed to embark on this professional career. We are interested in training more doctors and dentists and veterinarians for the state of Arizona, but only if they will prove to be a credit to this state once they have been trained.

The student contract program for the academic year 1953-54 involves 62 students from five states enrolled in three professional schools. Arizona has 5 students in veterinary medicine at Colorado Agricultural and Mechanical College, 2 in medicine at the University of Colorado, and 2 in dentistry at the University of Oregon. Montana has 3 students in veterinary medicine at Colorado Agricultural and Mechanical College and 1 student in medicine at the University of Colorado. New Mexico has 3 students in veterinary medicine at Colorado Agricultural and Mechanical College and 21 students in medicine at the University of Colorado. Oregon has 4 students enrolled in veterinary medicine at Colorado Agricultural and Mechanical College. Wyoming has 21 students in medicine at the University of Colorado. Dr. William C. Jones, Executive Director of the Western Interstate Commission for Higher Education, has forwarded a brief resume:

"Recognizing that the success of this program depends on an understanding of its objectives by the citizens of the states involved, the Commission has begun a series of intra-state meetings for a discussion of its organization and program. To these are invited college and university administrators and faculties, state officials, legislators, publicists and others. The first meeting was held at Salem, Oregon, in December, 1953; a second will be held at Helena, Montana in early March of 1954.

"The Commission is aware of the handicap to its activities by the official absence of the three states and two territories which have not yet ratified the compact. This is particularly true of California and Washington which together have 6 medical schools, 5 dental schools, 2 schools of veterinary medicine and the West's only school of public health. Several of these schools indicated interest in the contract program of the commission and are desirous of realizing some of its benefits in their financial support.

"Anticipating hopefully the time when these five states and territories will be full participants, the commission has invited their representatives to be present at all meetings and conferences arranged by the commission. It has instructed the executive director to be readily available to state officers, legislative committees, professional organizations and others within these states for any information or services desired.

"We are encouraged by the progress which has been made, but we should recognize that states are slow to develop interstate cooperation, except under some great compulsion. With the general spirit of optimism which prevails throughout the west we have both high enthusiasm and obvious reluctance to enter a program of interstate cooperation in higher education. We have no dire forces of immediate necessity. Regional cooperation in higher education in the West will be based thus clearly upon the enlightened self-interest of the states and perhaps we should clearly recognize this.

"If this be so, two facts should move us into a program of regional cooperation in higher education. First is the increased cost of higher education which must be anticipated in the years just ahead. The Legislative Auditor of Washington has made some projections on the situation in that state. The average enrollment

in all state institutions of higher education in Washington is expected to increase from 22,000 in 1955-57 to 33,000 during 1963-65, a 50 per cent increase. Higher education costs in Washington, he anticipates, will rise at an increasing rate from \$62 million for 1955-57 to \$98 million for the 1963-65 biennium — a 58 per cent increase. This includes salaries, wages and operations and capital outlay. Salaries, wages and operations rise from \$54.5 million for 1955-57 to \$85 million for 1963-65, a 58 per cent increase. These projections could be duplicated for almost any state in this Western Region, for it is estimated that none of these eleven Western states will have an increase of college-age population between 1953 and 1970 of less than 65 per cent — five of them will have an increase of over 100 per cent, with California at the top of the nation with over 200 per cent.

"Second is the great number of American young people of ability who do not get to college. If we really have conviction that America's strength is in the increasing educational attainments of her people, we are concerned with the findings of the National Manpower Council, as reported in *Science* of June 5, 1953. This agency, established by President Eisenhower while serving as President of Columbia University, has reported that of those with ability to do college work, less than one-half ever get to college and only one-third graduate. We admit that is a grievous waste of our fundamental natural resource, human intelligence, and, if we would be considered educational statesmen, we must be concerned that the advantages of higher education shall be brought to an ever-increasing part of our citizenry.

It is the program of the commission to get those who have the responsibilities of higher education in the West, governors, legislators, and institutional administrators, to confer together to work out the programs in terms of needs and opportunities. Over the years this should develop acquaintanceship and confidence — a climate of understanding and adventure — in which interstate cooperation will be possible. This, we submit, is the essence of the democratic way — free men identifying their problems and working out their own solutions for these problems."

SUMMARY & CONCLUSIONS

It would appear from available statistics that

we do not have the population or money to support a medical school in Arizona at this time. If present trends in population continue, and the state can assume the large financial obligation necessary to build and maintain a medical school it is believed the year 1970 may see the introduction of legislation for a medical school. Presuming that it takes five years to enact such legislation; three years to assemble the faculty and construct the physical plant; the first student should enter the medical school in 1978. The Western Interstate Commission for Higher Education is providing ways and means for educating medical, dental, and veterinary stu-

dents by cooperation with the surrounding Western states. These students are being encouraged to return to Arizona to practice their profession. The cooperative effort by the states should allow for better utilization of facilities now available. If the compact succeeds like a similar compact has already succeeded in the Southern states, many problems will be solved. The medical students, dental students, and veterinary students from Arizona should be adequately cared for up to and including the time when the decision must be made for establishing such schools within the boundaries of the state.

THE USE OF SERPASIL* FOR RESTLESSNESS IN ACUTE CLOSED HEAD INJURIES — A PRELIMINARY REPORT

Harry F. Steelman, M.D.

Phoenix, Arizona

SERPASIL has been used as a sedative in many conditions which are cerebral in origin. It was felt that it might be of value in restlessness due to closed head injuries.

Materials and Methods: Ten patients with acute closed type of head injuries were given Serpasil, 1 to 2 ccs. (2.5-5 mgms.) every 2 to 3 hours intramuscularly. No patients who were in shock were treated with Serpasil.

Observations and Results: Serpasil did not effect the state of consciousness, size, nor reactions of pupils to light, nor did it depress respiration. The results were uniformly good and all patients were quieted until recovery from the effects of the brain injury had occurred. In many patients the results were often dramatic and patients were sedated enough to make them amenable to nursing care and prevent them from injuring themselves by restless movements. No adverse effects were observed.

SUMMARY AND CONCLUSIONS: Serpasil was given to 10 patients with restlessness due to acute closed head injuries with uniformly good results. Restlessness was controlled without impairment of state of consciousness, pupillary size and response to light or depression of respiration. Initial observations indicate that serpasil is superior to other sedatives in patients with acute cranial trauma.

*Furnished by Ciba Pharmaceutical Products, Summit, New Jersey.

550 West Thomas Road.

Good News

For the second year in succession ARIZONA MEDICINE JOURNAL has been awarded a Plaque for General Excellence from the Arizona Newspaper Association presented by Blake Moffitt and Towne. The judging was supervised by the Western Society of Business Publications, Inc., San Francisco, California.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE

FIRST Admission. A fifty-five-year-old merchant was admitted to the hospital because of sweating and fever.

On the day before admission he was somewhat constipated, and while attempting to have a bowel movement he became chilly, and shortly began sweating. He was drowsy, went to bed early, and four times during the night vomited pink material. The next morning he was still drowsy, had blurred vision and had a temperature of 101.8°F., so he was advised to enter the hospital.

Five years previously, on routine examination, he was found to have mild hypertension and diabetes mellitus. The diabetes was easily controlled by diet alone, and he felt well until two years before admission when he had a sudden onset of left-sided weakness. He was treated for six weeks in another hospital and subsequently at a rehabilitation center, with gradual but incomplete recovery of function in the left arm and leg. Seven months before entry he had a one-week episode of fever, diagnosed as "virus infection"; the urine was said to be "infected," at that time. Review of systems and past history were otherwise noncontributory.

Physical examination showed an obese, hirsute, well developed, drowsy man, who appeared acutely ill. There were scattered rales and bronchial breathing over the chest bilaterally. The heart was slightly enlarged, the border of dullness extending to the left, and there was a Grade 2 apical systolic murmur. There was questionable resistance to palpation over the right upper quadrant of the abdomen. The prostate was twice the normal size. There was left hemiparesis, with generally sluggish re-

flexes, and an extensor plantar reflex on the left.

The temperature was 104°F., the pulse 120, and the respiration 36. The blood pressure was 130 systolic, 90 diastolic.

The urine was cloudy, had a specific gravity of 1.018 and gave a xx test for albumin, a green sugar reaction and a negative reaction for bile and acetone; the sediment contained 10 red cells, 16 white cells with frequent clumps, a rare coarsely granular cast and a few bacteria per high-power field. Examination of the blood disclosed a hemoglobin of 15.5 gm. per 100 cc. and a white-cell count of 27,000, with 99 per cent neutrophils. The non-protein nitrogen was 33 mg., and the blood sugar 260 mg. per 100 cc., and the carbon dioxide 25.5 milliequiv. per liter. A lumbar puncture revealed normal dynamics and a normal appearance of the spinal fluid, which was negative on cytologic examination, had a total protein of 50 mg. and a sugar of 170 mg. per 100 cc. and gave a gold-sol curve of 0001110201. The bromsulfalein test demonstrated 58 per cent retention of the dye after forty-five minutes. A roentgenogram of the chest showed the heart to be considerably enlarged, chiefly in the region of the left ventricle. The superior mediastinum was broad, apparently owing to a tortuous aorta and fairly prominent vena cava. The lung fields were clear. An intravenous pyelogram was unsatisfactory, but there was less excretion on the left. An electrocardiogram revealed a normal rhythm at a rate of 75, a PR interval of 0.16 second, low T waves in Leads 1,2,3, V5 and V6 and upright T waves in Leads V1, V2, V3 and V4. Cultures of urine showed no growth. Heterophil-antibody agglutinations for typhoid, paratyphoid and brucella organism were negative, as was a smear for malaria.

The patient was given penicillin, streptomycin and terramycin but continued to have irregular temperature spikes up to 101°F. On the ninth day cystoscopy was performed, and a markedly enlarged prostate was found. The left ureter could not be catheterized. On the next day slight jaundice was noted. The blood culture was reported as showing *Bacillus pyocyaneus* (*Pseudomonas aeruginosa*) overgrowing *Staphylococcus albus*. The nonprotein nitrogen was 31

31 mg., the albumin 3.48 gm., and the globulin 2.31 gm. per 100 cc., with an albumin-globulin ratio of 1.5. The stool showed a faint trace of urobilinogen; the urinary urobilinogen was 0.7 Ehrlich units. The serum bilirubin was 0.5 mg. direct and 0.9 mg. total, and the alkaline phosphatase 9.2 units per 100 cc. A repeat urine for urobilinogen contained frank blood. Cephalin flocculation was x in forty-eight hours. A Graham test revealed a nonfunctioning gall bladder and a suggestion of calcification above the right kidney.

The patient continued to have chills and an irregular, spiking fever, with a maximum temperature of 106°F., and although the physical examination remained unchanged the white-cell count rose to 51,000, with 97 per cent neutrophils, many of which were band forms. On the eighteenth day a blood culture grew *Alcaligenes faecalis*. An x-ray film of the abdomen demonstrated a 1-cm. calcific density in the left pelvis, and an intravenous pyelogram showed the left kidney to be larger than the right, when poorly defined margins. Excretion was slowed in the left kidney, and the left pelvis, calyces and proximal ureter was dilated. The calcification lay in the position of the distal ureter, and there was evidence of prostatic enlargement. The fever gradually subsided, and on the thirty-second day a left nephrectomy was performed. The pathological diagnoses were renal lithiasis, with hydronephrosis, and acute and chronic pyelonephritis.

Postoperatively, the patient's general condition remained the same. He was afebrile, and urine output was adequate, but with a residuum of about 200 cc. The urine had a specific gravity of 1.008 and gave a negative test for albumin, with 3 red cells and 60 white cells per high-power field in the sediment. He was discharged on the fiftieth day with arrangements for catheterization as necessary and instructions to return in a month for prostatectomy.

Second Admission (seventeen days later). After a week at home the temperature returned to 101 to 102°F., and the patient became anorexic and dehydrated. The urethral catheter was replaced and streptomycin and penicillin administered, but without effect, and he was readmitted to the hospital. Physical examination and laboratory data were essentially unchanged. He was given streptomycin, aureomycin and terramycin. The urine output ranged from 500

to 1000 cc. daily, and his condition remained stable except for occasional hiccups until the seventh day, when severe dyspnea, cyanosis and tachycardia (rate of 180) suddenly developed. There were rales at both lung bases and a to-and-fro apical cardiac murmur. A roentgenogram of the chest showed no change from previous films. An electrocardiogram revealed sinus tachycardia (rate of 150), with slurred S waves. The QRS complexes were widened slightly up to an interval of 0.1 second, and there was an occasional premature ventricular beat. The T waves were low in all leads; there were no abnormal Q waves. The R waves were upright across the chest. The patient as digitalized and dyspnea decreased. A repeat electrocardiogram the next day showed normal rhythm at a rate of 100. The slurred S waves had disappeared, and the QRS complex was normal.

Distressing hiccups returned, and the temperature spikes became higher, up to 105°F. The spleen was easily palpable, and there was a question of a large, nontender right-upper-quadrant mass. The white-cell count was 15,400, with 83 per cent neutrophils. The urine was cloudy and dark amber, with a specific gravity of 1.018, and gave a negative test for albumin; the sediment contained 20 red cells, 100 white cells and a few bacteria per high-power field. The serum sodium was 124.5 milliequiv., the chloride 91 milliequiv., the potassium 2.9 milliequiv., and the carbon dioxide 29.8 milliequiv. per liter; the nonprotein nitrogen was 24 mg., and the serum bilirubin 1 mg. direct and 1.4 mg. total per 100 cc.

On the tenth hospital day a cholecystotomy was done. On the next day the patient became unresponsive, with rapid, noisy respiration, a stiff neck and a rapid, regular heart rate. Blood cultures taken on the seventh and eighth days all yielded *Escherichia coli*, which was insensitive to streptomycin, sureomycin, terramycin and chloramphenicol. On lumbar puncture the cerebrospinal fluid was under an initial pressure equivalent to 220 mm. and a final pressure equivalent to 165 mm. of water after removal of 15 cc., was lemon-tinted and grossly cloudy, and contained 4500 cells per cubic millimeter, all neutrophils. Coma deepened, and he died on the thirteenth hospital day.

DR. J. D. HAMER

This case appears to be one in which a 55 year old man had more widespread infection in

his body that his doctors could cope with in the light of their impressions and diagnosis; certainly more than the patient could handle inasmuch as he finally succumbed to an overwhelming septic infection terminating in the central nervous system.

Previous to the first admission, the man was found to have hypertension and diabetes, and apparently had suffered some type of cerebral lesion two years previously, with a residual left hemiparesis.

An illness seven months previously had been diagnosed as "virus infection", with some urinary infection at that time.

On the first admission, there were scattered rales over the lungs, and an enlarged heart, an apical systolic murmur, a large prostate, and a high fever.

At this time, numerous studies were made by the laboratory. Albumin, casts, some blood and pus were in the urine, white count was 27,000, with 99% polys, blood sugar was 260 mgms. per 100 c.c. of blood. Lumbar puncture yielded approximately normal findings in the spinal fluid, and liver function tests were abnormal to the extent that liver damage should be suspected. There was no demonstrable lung disease to x-ray, and the typhoid, brucellosis and malaria tests were negative.

The patient did not respond well to administration of several types of antibiotics, so, after further studies, which were centered on the urinary tract, a left nephrectomy was performed. By this time, blood cultures had shown *B. Pyocyanus*, *Staphylococcus Albus*, and later, a culture yielded *Alcaligenes Fecalis*.

After recovery from the operation, the man improved, so was sent home to await a period of time, because later, he was to be subjected to a prostatectomy.

However, before the month which was estimated for convalescence, was up, the patient was in the hospital again with a high fever; it was then that something happened to produce a cardiac blow-up, with dyspnea, cyanosis and tachycardia. Digitalis was given, with improved these complaints. After the cardiac episode, the fever arose again, and a mass was felt in the right upper quadrant of the abdomen, for which a cholecystotomy was done. Following this, the next day, in fact; meningeal symptoms developed with all their fury. The blood culture at this time yielded *Colon Bacillus*. 4500+ cells

were found in the spinal fluid, with 99% polys. This last episode of C.N.S. infection finished the patient. We are told that the *Coliform Bacillus* was insensitive to all the antibiotics.

In considering this case, one is impressed with the variety of organisms shown in the blood cultures, four to be exact. It seems obvious also that there must have been a septicemia from some source, because the performance of a left nephrectomy did not stop the process. Yet in reading the protocol, it appears also that the urinary tract was involved, or the prostate, to further the stimulus or portal of entry for the septicemia. Manifestations of a wide spread infection developed in the heart, the biliary tract, spleen and terminally, the central nervous system.

B. Pyocyanus has been known to cause blood stream infections, and this organism is not susceptible to the antibiotics used in this case. Another one has been reported effective, however. *Coliform Bacilli* usually are sensitive to the mycins, if used in sufficient dosage. Both of these organisms can be found in the stool, and both can cause similar types of infection.

The most common disease produced by the *Colon Bacillus* is urinary tract infection, either following dysentery, or thru trauma to the urinary passages, from inlying catheters, bladder stasis or obstruction of a ureter. Frequently in the infections, the *Colon Bacillus* has, as its companion, the *Streptococcus Faecalis*. Bacteremia with these organisms are rare, except in infants and elderly debilitated individuals. Diabetics are particularly subjected to *Colon Bacilli* infections, especially men with neurologic bladders, prostatic hypertrophy, urethral stricture or calculi.

In severe infections due to the colon group, the prognosis depends upon several factors. First, pure *Colon Bacilli* infections do better than the mixed types. Second, the age and condition of the patient makes a marked difference; infants and debilitated patients do badly. Third, the type of anatomic difficulty in the urinary tract has a marked bearing upon prognosis.

In the urinary tract, the degree of obstruction to the renal parenchyma and the possibility of remedying the obstruction to urinary flow will influence the outcome of an acute attack, and ultimate course of the disease. Primary infections, locally only, in diabetics and infections due

to *Proteus* or *Pyocyanus* are apt to be resistant to therapy.

In this case, its progress suggests a bacteremia, with final meningeal involvement with one or more of the Coliform organisms. Either the wrong therapy was used among the antibiotic or chemotherapeutic agents, or they were not used in sufficient concentration to affect a cure. I suspect there will be found in the autopsy multiple septic foci in the remaining kidney, spleen, liver, lungs, endocardium and meninges.

Formation of abscesses in the brain itself is a distinct possibility.

This bacteremia could be the result of one of the organisms, or a combination or more than one of the organisms found in blood culture. A more likely final diagnosis, however, would center in the heart, in the form of a subacute bacterial endocarditis. That would be my first choice among the several possibilities for a diagnosis.

DIFFERENTIAL DIAGNOSIS

Dr. Allen G. Brailey: In this case the nature of death seems fairly obvious; it is more difficult to guess how and where the fatal disease arose.

May I see the x-ray films?

Dr. Stanley M. Wyman: In the x-ray films of the chest the heart shadow is enlarged. The patient, however, is lying on his back so that part of the apparent enlargement is due to magnification. I think the superior mediastinal fullness is probably vascular in origin. The original pyelogram showed a large amount of material obscuring the kidneys, and the examination is unsatisfactory. A density overlying the left sacrum is seen that in subsequent examinations, a little more than two weeks later, has progressed downward somewhat; this is quite consistent with a large stone in the left lower ureter. On the second pyelogram the left kidney shows function that cannot be seen with any degree of certainty on the original examination. There is slight calcification in the left kidney.

Dr. Brailey: What about calcification above the right kidney?

Dr. Wyman: That is seen on this film of the gall bladder. I am not sure of its nature; I think it is a "red herring." One film from a negative barium enema examination is included.

Dr. Brailey: Is the liver size normal as far as you can tell?

Dr. Wyman: The liver is not grossly enlarged.

Dr. Brailey: Do you think this could be a dissecting aneurysm in the mediastinum?

Dr. Wyman: I doubt it seriously.

Dr. Brailey: On the final admission a to-and-fro apical murmur was heard. Was that due to a ruptured valve, to aortic regurgitation to pericarditis or to something else?

Dr. F. Dennette Adams: May I make some corrections in the protocol that may help you? You can discount the bronchial breathing and the cardiac murmur; they were not heard by most observers. During the first few days we thought (and justifiably, it seems to me) that we were dealing with a case of urinary infection based on prostatic enlargement. The patient was promptly established on constant drainage and did very well for a few days. But he then began to have recurrent bouts of fever between which he was better. It was then that further studies were initiated.

Dr. Brailey: Was he afebrile for a while after constant drainage was started?

Dr. Adams: Yes; the temperature came down and it looked as though the Foley catheter and antibiotics had straightened him out. When we were about ready to send him home, the episodes of fever with elevated white-cell count began.

Dr. Brailey: This patient died as a result of overwhelming infection. As for the infection itself, I am embarrassed with riches. Four different organisms were cultivated from the blood, of which three were gram-negative bacilli. The *Staph. albus* can be ignored as a contaminant, but I am obliged to accept the other three as significant although I suspect that it was the resistant strain of *Exch. coli* that gave him the coup de grace. But how does it happen that three organisms were grown? It is a curious fact, and one not easily explained; infections are not commonly due to multiple organisms. Even if several organisms are introduced into a wound, we believe that one quickly tends to "outgrow" the others.

This man had had a source of infection in the kidney for a long time, probably for years. It is not helpful that the protocol makes no mention of tenderness of either kidney area. In fact there is no mention of localizing tenderness of any sort. However, much of the time he was so sick that probably he was not very co-operative, and, furthermore, in fatal pyelonephritis or necrotizing papillitis, there may not

be any renal pain or tenderness. I wonder whether cultures were taken from the excised left kidney and, if so, what organisms grew out.

If we assume for a moment that the fatal infection arose from pyelonephritic kidneys, when did it first burst its renal confines and invade the blood stream? I am told that the patient had a cerebrovascular accident two years before admission that resulted in left hemiplegia. Such episodes are very often due to emboli, but it is hardly credible that he had emboli to the kidneys or that he nursed a subclinical bacterial endocarditis for two years. Seven weeks before entry he had fever for a week, and urinary-tract infection was noted at that time. Perhaps he first had bacteremia at that time. The onset of the acute illness is carefully timed for me, and the suggestion seems to be made that there was some causal relation between straining at stool and the onset of chilliness and sweating. The chilliness and sweating in this case surely marked a rapid extension of infection, but it is difficult to see what his toilet activities could have had to do with that unless, conceivably, a small abscess in some organ ruptured and spilled directly into a vein. Such accidents must be rare but they have been described by Webber and Coe, and such a hypothetical event would have the merit of explaining much of what happened to this man. It would explain the acute onset, and it would offer a reason for the culture of three separate organisms from the blood. However, the onset of acute pyelonephritis or papillitis is often as acute as this without obvious explanation.

It is hard to be sure of the kidney lesion. There are many factors in favor of necrotizing papillitis of the so-called subacute or protracted sort. The patient was a man. He had diabetes. It is interesting that the severity or mildness of the diabetes seems to bear no relation to the incidence of papillitis. The clinical course in papillitis is usually brief and stormy, and it is often complicated by overwhelming blood-stream infection. Against papillitis is the fact that kidney function remained satisfactory and azotemia did not develop. The majority of persons with necrotizing papillitis die of uremia but in 1950, Robbins et al. reported 19 cases, in 5 of which the patients never showed nitrogen retention but died of septicemia, toxic hepatitis and other causes. Perhaps it is of only academic

interest whether the kidney lesion is classified as papillitis or pyelonephritis. I expect that the liver showed a toxic hepatitis and perhaps multiple abscesses as well.

Did the patient have a bacterial endocarditis? If new heart murmurs of significance developed perhaps endocarditis should be considered. There was no evidence of myocardial infarction. Presumably, the tachycardia was a toxic effect, and, in view of some changes in the T waves as reported, the rhythm probably arose from an ectopic focus near the node. A terminal meningitis obviously developed.

If I have drawn a true picture of the development of this man's fatal illness, why did he have an interval of freedom from fever during which it was hoped that he was convalescent? The left kidney, which was perhaps the chief original focus of the infection, had been removed, and he had had vigorous treatment with antibiotics, which may have suppressed the disease for the several days during which he appeared to be better. It is somewhat astonishing to read that the surgeons found the courage to remove the gall bladder on the second entry, but I suppose it was hoped that he had an empyema of the gall bladder whose removal would cure him.

Dr. Benjamin Castleman: A cholecystotomy was done; the gall bladder was not removed.

Dr. Brailey: Then the physicians caring for the patient thought that the patient had an empyema of the gall bladder and that drainage would cure it.

Finally, in retrospect, could anything more effective have been done to have averted the fatal outcome? Certainly, it is a great pity that the urinary-tract infection was not discovered at its onset and treated effectively from the start. Diabetes is a great handicap in the treatment of infection, and one wishes that the diabetes had been handled more effectively. If any effort was made to reduce his weight to normal it was unsuccessful. The organisms to which he succumbed belong to a class that in general do not respond well to antibiotics. Perhaps the strains that he harbored were hopelessly resistant to antibiotics from the beginning, but it is possible that a heavier dosage at the start would have helped him to get the upper hand before fatal resistance to drugs had developed.

I think that the diagnoses were chronic and acute pyelonephritis, with possibly necrotizing

papillitis, bacteremia due to *Esch. coli*, multiple abscesses, meningitis and diabetes mellitus.

Dr. Adams: May I add that during part of the early hospital course the patient was so sick that it was impossible to pursue further investigations? An attempt was made to get retrograde renal studies, but the prostate was so large that the urologist was unable to pass a catheter into either ureter. Efforts to obtain intravenous pyelograms were hampered for several days by inability to clear the bowel. When this was finally accomplished, we discovered what we had thought all along; that he had renal infection. We were next faced with the decision whether to go after the stone or do the simpler procedure, which was to drain the kidney through the back.

Dr. Brailey: I am not criticizing what was done in the hospital, but, after, the situation had existed for months or years before any treatment was received.

Dr. Adams: I merely want to clarify the sequence of events after the patient came to the hospital. After removed of the kidney he did beautifully. During convalescence there was much deliberation whether to operate on the prostate. But he was so well and had been through such a serious illness that we decided to give him a vacation and bring him back later for prostatectomy. He left the hospital in fine shape but got into more trouble during the period at home. The reason for the gall bladder operation was that the biliary tract had been considered as the possible cause of the sickness during the first admission. During that time jaundice developed. It was postulated that he might have an infected gall bladder, perhaps with a stone in the common duct, and that our diagnosis of renal infection, which had not been proved at the time, was incorrect. On the second admission we were forced to reopen the question of the biliary tract.

Dr. Castleman: Did you not feel a mass in the right upper quadrant?

Dr. Adams: There was a good deal of discussion about that. Some of us believed that the abdomen was tender, with a poorly definable mass in the right upper quadrant. The second operation was done because we had to grasp at every straw. We continued to worry about infection in the kidney bed, although at no time, even when he had the "red-hot" kidney, did we find tenderness or any localizing sign.

Dr. Lorande Woodruff: This case was confusing because at no time was there any pain or tenderness over the left kidney. This lack of signs or local symptoms was one thing that stayed my hand for a long while. I could not be sure that the area of calcification seen in the plain film was a stone, and even if it was it might have been present for several years and had nothing to do with the acute illness. We needed additional evidence, which was finally supplied by the second pyelogram.

CLINICAL DIAGNOSES

Septicemia and meningitis due to *Exch. coli*.
Pyelonephritis.

Diabetes mellitus.

DR. ALLEN G. BRAILEY'S DIAGNOSES

Acute pyelonephitis, with ?necrotizing papillitis.

Bacteremia due to *Exch. coli*.

Multiple abscesses.

Meningitis due to *Exch. coli*.

Diabetes mellitus.

ANATOMICAL DIAGNOSES

Subacute bacterial endocarditis due to gram-negative bacillus.

Septic infarct of right kidney.

Meningitis, subacute bacterial.

Ureterolithiasis, left.

(Cholelithiasis.)

Operations; nephrectomy, left, and colecystotomy.

PATHOLOGICAL DISCUSSION

Dr. Castleman: At the operation during the final admission Dr. Leland S. McKittrick found a thin-walled gall bladder, normal except for some stones, which he removed; the bile appeared normal, and there was no inflammation of the wall. There was no evidence of residual infection in the kidney bed, and this was confirmed at the time of autopsy. The right kidney was swollen and contained one abscess that measured 3 by 2 cm. and was full of bacteria.

Microscopical examination showed that near the abscess was a large vessel containing a septic embolus. This came from large, fairly firm, granular vegetations attached to the aortic cusps that on microscopical examination were well organized and contained innumerable organisms. The rest of the kidney was not too diseased. We did find a stone in the lower left ureter that followed or was associated with the pyelonephritis or pyonephrosis on the left side.

I believe the sequence of events was an original renal infection on the left side due to the stones. As we know, a septicemia and also a bacterial endocarditis developed, and may well have been present after the first operation. Then perhaps he recovered, or the endocarditis was masked by the antibiotic treatment that he received for the renal infection. A flare up of the endocarditis with an embolus to the kidney followed. There was, as was suggested, a meningitis — almost certainly a bacterial, embolic type of meningitis — without any real infection in the brain. The spleen weighed 700 gm. and was septic.

Dr. Adams: I did not misinform Dr. Brailey concerning that cardiac murmur. Looking through the record, I cannot find that it was heard. Furthermore, I doubt if anyone could have heard it in this very thick-chested man, who had constant noisy, grunting respirations.

Dr. Gordon S. Myers, who examined his heart a few days before death, heard no murmurs at all.

Dr. Castleman: Dr. Kunz, will you tell us about the cultures?

Dr. Lawrence J. Kunz: The organism isolated from the blood cultures on the last admission that were reported as *Exch. coli* were culturally consistent with the mucoid type of coliform bacteria. Just before the patient died, Dr. Thomas Paine took a subculture of one of those plates to do a tube-sensitivity test, since the organisms had been found resistant to all antibiotics, and discovered that it was an atypical *B. pyocyaneus* (*Ps. aeruginosa*), a very mucoid organism that is rarely seen but on prolonged cultivation did show pigment. I think that might resolve the difficulty of the three organisms in a single condition. The infection was quite resistant to all antibiotics tested.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS — A.M.A.

The Council on Medical Education and Hospitals of the A.M.A. is planning a program on the subject of "The Potential Use of Television in Postgraduate Medical Education" to be presented as a full-day working conference on February 5, 1955 in the Ballroom of the Palmer House Chicago. This is expected to be the first of a series of annual "workshop" type conferences on one particular aspect of postgraduate medical education. Television is the subject of the first meeting because of the extreme interest in this medium that has been shown recently, as well as its pertinence to the future of postgraduate education. The program is planned in such a way as to present both the educational and technical aspects of the subject, so that medical educators and medical society, hospital and specialty society representatives at the meeting will be able to obtain a broad picture of the medium and help them to determine whether or not it is something they might use in their own programs, and if so the problems involved in its use. Following a keynote address by Dr. John Cline, the morning session will be devoted to consideration of the purely educational aspects of the medium. The afternoon session will deal with technical considerations and financing. The participants will be drawn from the fields of general education, tele-

vision, industry, medicine, medical education, pertinent government agencies and others. It is planned to have a number of demonstrations in the afternoon session using actual camera chains and receiving equipment. Following the session it will be possible for the audience to examine these and observe some of them in further action, and visit a local television station in action.

INTERNATIONAL COLLEGE OF SURGEONS

Mid-Atlantic Div. Regional Meeting

A cordial invitation is extended to members of the surgical and allied professions to attend the Mid-Atlantic Division regional meeting of the United States Section of the International College of Surgeons to be held in Washington, D. C. February 11 and 12, 1955. Headquarters will be in the Hotel Statler where all the scientific sessions will be held.

There will be a luncheon each day and a banquet preceded by a social hour on Friday evening, February 11.

A very interesting program has been planned for the ladies including a tour of the White House.

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THE *President's* PAGE

ORGANIZED MEDICINE

ORGANIZED MEDICINE IN ARIZONA IS TAKING ITS PLACE IN THE PROGRAM FOR POST-GRADUATE EDUCATION BY PROVIDING INSTRUCTION IN THE VARIOUS FIELDS OF MEDICINE WITHIN OUR OWN STATE. MEETINGS OF THE GENERAL PRACTITIONERS' GROUP SUCH AS THE RECENT AND WELL ATTENDED CONFERENCE AT TUCSON, BY THE STATE GROUP OF THE COLLEGE OF SURGEONS AND COLLEGE OF PHYSICIANS AND THE VARIOUS SPECIALTY GROUP MEETINGS, ADD TO THE OPPORTUNITY FOR SELF IMPROVEMENT. THE THIRD ANNUAL CANCER SEMINAR TO BE HELD JAN. 13, 14, AND 15, 1955, HAS IN THE SPACE OF THREE YEARS BECOME A NATIONALLY KNOWN AND ATTENDED CONFERENCE WITH HUNDREDS OF REGISTRANTS FROM OUTSIDE OF THE STATE. IT IS OBVIOUS, THEREFORE, MEDICINE IN ARIZONA IS NOT SHIRKING ITS DUTY TO ITS MEMBERS AND IT IS ATTEMPTING IN EVERY WAY TO PROVIDE THEM WITH THE MEANS TO FURTHER IMPROVE THEIR CARE OF THE PATIENT.

OSCAR W. THOENY, M. D.,

PRESIDENT ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
 2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
 3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
 4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
 5. Submit manuscript typewritten and double-spaced.
 6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
- The Editor is always ready, willing, and happy to help in any way possible.

THE DANGER AROUND US

NOT many years ago we had an inquiry relative to some radioactive spring water. Its radioactivity was known to be small in amount; the question was, whether it was safe for daily human consumption. We could not answer the question, and a search of the literature seemed to indicate that no one knew at that time just how much radioactive material could be safely ingested. Much information regarding this subject has been gained since the widespread use of radioactive isotopes, but there is still much to be learned.

Since the discovery of x-rays slightly more than a half-century ago, many scientists have given much time and thought to the determination of a safe maximum exposure to x-rays and other ionizing radiation. In the light of increasing knowledge the accepted maximum safe exposure has been revised on occasions, and each revision has been downward. The value accepted at this time is 0.3 r (roentgen) per week (with certain permissible slight variations dependent on quality of radiation, portions of body exposed, and other conditions).

It is revealing then, and perhaps a little surprising, to note that some workers estimate that the average individual receives from natural and artificial sources in his daily environment a daily dosage of about 0.015 r; about one-twentieth of the maximum permissible daily dose! The natural sources include cosmic rays, potassium 40, carbon 14 and radon in his body and environment. Artificial sources include luminous watch dials, certain eyeglass lenses, TV projection apparatus and release of atomic energy.

Though on the surface, these facts may appear alarming, actually the average individual has nothing to fear as he still has 19/20 or 95 per cent of his reserve tolerance available for the unusual occasional exposure. Not so for the man who must work daily in relatively high concentrations of radioactivity. In many cases he must work near the maximum permissible dosage level and therefore has no reserve tolerance to draw on to allow for unusually high exposures. He is in danger and cannot allow himself any relaxation of protective measures or and indiscretions in this regard.

The ordinary fluoroscope may deliver from 15 to 35 r per minute in its direct beam under usual operating conditions. The physician who uses the x-ray or fluoroscope frequently may, by intercepting this direct beam by some part of his body, in a few seconds receive a dose exceeding his maximum safe dose for a whole week! It is obvious then that the physician working with these agents must be ever alert to his danger and always mindful of his protection. Just as the surgeon develops a rigid, uncompromising, aseptic technic against the

bacterial contamination which he cannot see but considers always present, so also must the radiation worker adopt an inflexible, strict "aseptic" technic against the radiation danger which he must always consider present and never deviate from this. The temptation is great to leave off the gloves for a short fluoroscopy "just this once", or to lift the radium applicator with his fingers since the forceps are not handy "just this once"; but he must never allow himself such indiscretions.

Small wonder then that we are alarmed when we see fluoroscopes in many offices—often with no lead apron or gloves in sight, x-ray machines with no apparent regard for direction of beam or protection for the operator, and x-ray shoe-fitting machines in stores. These situations are dangerous and with the probability that the increasing manufacture and use of radioactive products will increase, even though slightly, the amount of daily irradiation everyone receives, they will become more dangerous.

Even at the risk of being accused of an economic interest in this situation, we feel our readers deserve a warning of this danger around us. Two premises are assumed. (1). A danger must be recognized in order to be combatted: Ignorance of the dangers confers no immunity to it. (2). Protective measures must be known before they can be practiced, and must be consistently and constantly practiced to be effective. Please be careful.

AMERICAN COLLEGE OF CHEST PHYSICIANS

THE Council on Postgraduate Medical Education of the American College of Chest Physicians, in cooperation with the respective state chapter of the College as well as the staffs and faculties of the local hospitals and medical schools of Philadelphia, will sponsor the Eighth Annual Postgraduate Course on Diseases of the Chest, to be held at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 7-11, 1955.

Our postgraduate courses endeavor to bring physicians up to date on recent advancements in the diagnosis and treatment of heart and lung disease. Tuition is \$75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

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MILLIKIN, LESTER ALLEN, 2608 S. Kingshighway, St. Louis, Missouri.

RAGLAND, FREDERICK B., 148 Park Ave., El Cajon, Calif.

RALSTON, ROBERT J., 220 Interocean Ave., Holyoke, Colorado.

SATTENSPIEL, EDWARD, 550 West Thomas Rd., Phoenix.

SEYFERTH, ROGER CHARLES, 483 Fifth St., Elko, Nevada.

SHORE, SAMUEL, 800 N. First Avenue, Phoenix.

WATTERSON, ROBERT P., 105½ N. Main, McPherson, Kansas.

WEISMAN, SEYMOUR M., 109 E. Dunlap, Sunnyslope, Arizona.

WILLIAMS, JOSEPH HENRY, Culbertson, Montana.

Attention Doctors Keep your 1955 Medical Directory up-to-date. Similar lists will be published quarterly following each meeting of the Board of Medical Examiners. Tear out this listing and keep it in your Directory Booklet.

Dramamine's* Effect in Vertigo

Dramamine has become accepted in the control of a variety of clinical conditions characterized by vertigo and is recognized as a standard for the management of motion sickness.

Vertigo, according to Swartout, is primarily due* to a disturbance of those organs of the body that are responsible for body balance. When the posture of the head is changed, the gelatinous substance in the semi-circular canals begins to flow. This flow initiates neural impulses which are transmitted to the vestibular nuclei. From this point impulses are sent to different parts of the body to cause the symptom complex of vertigo.

Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic center to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

A possible explanation of Dramamine's action is that it depresses the overstimulated labyrinthine structure of the inner ear. Depression, therefore, takes place at the point at which these impulses, causing vertigo, nausea and similar disturbances, originate. Some investigators have suggested that Dramamine may have an additional sedative effect on the central nervous system.

Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Ménière's syndrome, the nausea and vomiting of pregnancy, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

Any of these conditions in which Dramamine is effective may be classed as "disease or abnormal stimuli"* of the tissues including the end organs (gastrointestinal tract, eyes) and their nerve pathways to the labyrinth.

Dramamine (brand of dimenhydrinate) is supplied in tablets of 50 mg. and liquid (12.5 mg. in each 4 cc.). It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



The site of Dramamine's action is probably in the labyrinthine structure.

*Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP 8:35 (Nov.) 1953.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

A recent symposium in Los Angeles (at the County General Hospital) gave LEUKEMIA THERAPY a "shot in the arm". . . . Actually that statement is both slangy and wrong, since the new drug "MYLERAN" is given by mouth. . . . It was praised by such experts as Cecil Watson of Minnesota and Max Wintrobe of Utah, but it should be said at once that it is not a cure. . . . Myleran was first used only 18 months ago in England. No prolonged effects can be known, but it is said to mark "the greatest advance yet known" on the basis of this short experience. . . . It is said to be mostly effective on the chronic leukemias. Doctors (and newspapers) are mumbling such comments as "no deaths in one series for 18 months"; "remissions last 4 to 18 months"; "life may be prolonged for years"; etc.

One of the jillion Calypso songs has the title "Just When We Think Yes, He say No". . . . This might be a description of the uncertainty about treatment of RADIATION EXPOSURE. Just when we get it fixed in our minds that a few units of blood might help, Dr. John Bugher, director of the A.E.C.'s Division of Biology and Medicine, says "Repeated small transfusions from different donors may create MORE hazard than from the original radiation hazard". . . . Use them only in emergency, since incompatibility and hepatitis may over-balance the value. . . . The man he say 'no', almost.

The J.A.M.A. published an abstract of the article in ARIZONA MEDICINE (August 1954) by H. M. Purcell Jr., — "Pulmonary Hyaline Membrane". . . . It is good to see recognition of original reports from our journal.

There have been several paragraphs in this column on the various aspects of BARBITURATE POISONING. . . . One of the newer methods has not been mentioned here and, since it has some support and has a tongue-twisting title, we give it to you. Robie was the first to use Reiter's UNIDIRECTIONAL ELECTRIC DIENCEPHALIC STIMULATOR. It raises the B.P., increases depth of respiration, improves the pulse, and is said by Michael and Baker of Columbus, Ohio, to keep "the individual alive until the body has a chance to destroy the barbiturate".

A plea for more small-caliber, INDIVIDUALIZED MEDICAL RESEARCH is made by Bromme, as quoted in the journal of the Michigan State

Medical Society. He insists that all research need not come from electronic computing machines. Someone must be the Beaumont who looks into St. Martin's stomach, and then thinks. Someone must look at a few thousand cultures, and remember. Someone must put 2 and 2 and 2 together from the literature. . . . Perhaps your case report at a staff meeting will set the mental (not IBM) wheels a-going.

The 'miracle' of a MITRAL COMMISSUROTOMY is still bright and fresh to those people who know about it. It is, incidentally, a miracle produced somewhat like the product Churchill described, by blood, sweat, and years. . . . The first step towards 'topping' the operation has been taken by two surgeons who helped make it possible. Drs. Keyes and Lam of Detroit have REPEATED a commissurotomy on a patient whose stenosis recurred after the first operation. . . . And they warn that it may be repeated more than twice if necessary!

Cooley, and the versatile De Bakey, report (in the same issue of J.A.M.A.) that they have done the MITRAL VALVOTOMY on five pregnant women, with good results. . . . Their other results were quite good too in a series of 110 patients with mitral stenosis. There was a 9% mortality, almost entirely due to thrombosis and embolism, but 74% of survivors did very well. . . . Any mortality at all is sure to start a gleam in a surgeon's eyes; it should be reduced, and probably can, especially if caused by clotting.

'Hospital Topics' has a section of News Briefs. The November issue mentions what is either a new dragon, or a straw-man. . . . The Joint Commission for HOSPITAL ACCREDITATION, sequel to the old certifying committee of the American College of Surgeons, is accused of clamping down too hard and fast in the midwest. Three well-known hospitals in one city lost their accreditation. . . . The chief pitfalls are medical staff organization and attendance at staff meetings. The chief beef of the hospitals is that the manual of rules is not yet available. . . . Whether the action is too rough or not, I'll bet hospitals will jump, just to be on the safe side.

Dr. Harold Diehl of Minnesota rassled with the topic "THE TRUTH ABOUT COMMON COLDS" in a recent Sunday magazine section (approved by the A.M.A.). . . . No news of help to the M.D., or of comfort to the patient resulted. . . . We are

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nearer to knowing about the causes, he says, but the 'cold' virus origin has many imitators 'Cold vaccines' are of no proved value. Antihistamine drugs help only to decrease some of the allergic signs and symptoms, and aspirin to decrease the aches. . . . Antibiotics are useless against the 'cold', useful against complications. . . . Dr. Diehl still believes that the best relief comes from a preparation which he made famous, codeine and papaverine (Remember, 'copavin'?) This requires a doctor's prescription, as does penicillin (it says here).

The CARTOON section of Collier's Magazine had a medical item which was cut out for us by a patient. It portrays the intense, thoughtless interest of a physician in a 'hot' medical problem, but to the startled concern of his patient. . . . A scientific-dressed medico is shown, talking on the telephone, while a puny victim stands by, dressed in shorts, shirt, and a worried frown. . . . The phone message reads, — "Hello, Bill. Do you want a real hair-raising feature for next month's medical journal?"

Reports of the 'STOMACH TUBELESS' method of testing for GASTRIC acidity have not been common since first mentioned last year, (given by mouth as "Diagnex" and tested for in the urine as liberated quinine). . . . A report from Washington, by the second-best medical journal in the U.S., (Med. Annals of the D. of C.) presents three findings.—1. Correlation between tube and tubeless tests is higher than 85%, and the tubeless may be more sensitive. 2. There may be a source of error from release of quinine by other intestinal secretions. 3. The test is comfortable (for the patient) and fast (for the technician). . . . They remind us that the occurrence of achlorhydria is only a bit more common than hyperchlorhydria in malignant gastric ulcer, and that achlorhydria is nearly as frequent in cases of benign ulcer.

Arizona physicians are interested in INSECT BITES, but an article with that title by the Allinghams of Oakland does not deal with the 'bites and stings' which provide our greatest problem. . . . They deal quite well with the tiny 'insanitation' bugs, but the black-widow spider is the only larger type mentioned. No scorpions, tarantulas, centipedes, etc. . . . You'll have to get along with the 6-year old summary in ARIZONA MEDICINE, plus the addendums of Prof. Stahnke of Tempe.

Drs. Jones, Robinson, and Meyer of Los Angeles have turned up with some odd conclusions in their summary of SURGERY FOR LUNG CANCER. . . . The statistics on resection are improving, but there is no increase in RESECTABILITY of the lesions seen. This is possibly a paradoxical effect of an increased usage of antibiotics; their tem-

porarily good effects may defer an actual diagnosis. . . . If smoking is a cause of pulmonary neoplasm it hasn't yet raised the incidence in women. It may be too early for the effect, since it is supposed to require 25 years of hard smoking (not that the gals aren't trying). . . . These three surgeons believe that LOBECTOMY is legitimate, and indicated, for silent peripheral carcinomas. Their operative mortality from lobectomy was 0%, compared with 5 to 6% for pneumonectomy. The 5-year survival after lobectomy is 60%, compared with 16% after removal of a lung. This suggests that the poorer prospects needed the larger operation, but it also indicates a good fate for the better cases, plus respiratory reserve and comfort. It also powerfully argues for case-finding x-rays of men over 40.

Barden of Philadelphia is quoted by the Ohio State Medical Journal on 'HOW TO DELIVER A MEDICAL ADDRESS.' . . . Speak 10 to 20 per cent less than the time allotted. Talk in headlines, in outline form. Be simple, terse, and logical in expression. Rehearse the paper with stop-watch and wife. Leave the audience wanting more.

'SOME OTHER WORLD' department.—Did you know that there is a "new, true MENOTHERAPY"? Did you know it is called 'BLUTENE'? Did you know that Blutene is TOLONIUM CHLORIDE? Did you ever hear of Tolonium? . . . To get back on safe ground, in our plain old world, we say that the Abbott Laboratories (makers of good, old, familiar, money-making 'Nembutal') make the menotherapy. Which, in this case, is a drug to end or prevent functional uterine bleeding. . . . Tolonium chloride is not a metal, but a dye known as 'tolnidine blue O', and it has antiheparin activity.

CORRECTION

On Page 468 of Arizona Medicine, December issue a 'Medical Abstract', "Treatment of Wounds Inflicted by Rabid Animals" was published. By some error, the reference for this abstract was omitted. The paper to which it refers is "Treatment Of Wounds Inflicted By Rabid Animals"—Shaughnessy, H. J., and Zichis, J.: Bull. World Health Organization, 10:805 (1954).

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REPORT OF THE DELEGATE

Report on Actions of the House of Delegates, American Medical Association,
Eighth Clinical Session, Nov. 29-Dec. 2, 1954, Miami, Florida

YOUR DELEGATE, together with our executive secretary, Mr. Robert Carpenter, attended all the sessions of the House of Delegates recently in Miami, Florida. We also arrived in time to attend the all day Public Relations Conference held the day before the opening of the Clinical Session.

This report represents a short summary of actions taken by the House of Delegates on some of the important matters brought before it. A summary of actions taken on all matters would be entirely too long for publication space, but the readers will get a complete digest of the deliberations shortly to be published in the A.M.A. Journal. Your delegate had the honor of serving on the Reference Committee on Military Affairs to which the subject of the Doctors' Draft, and other items coming under its jurisdiction, were assigned.

Geriatrics, medical ethics, internships, grievance committees, hospital accreditation, osteopathy, the doctor draft law, state subsidized medicine and malpractice insurance problems were among the major subjects of discussion and action taken by the House of Delegates.

During the meeting, the A.M.A. Board of Trustees also announced the appointment of a 13-member commission to make a comprehensive survey of the various types of plans through which the American people receive medical services. The commission, headed by Dr. Leonard W. Larson, Bismarck, N. D., member of the Board of Trustees, will begin work immediately and will require at least a year to complete its work.

Named as the 1954 General Practitioner of the Year was Dr. Karl B. Pace of Greenville, N. C., whose selection by a special committee of the Board of Trustees was announced at the opening session of the House of Delegates on Monday by Dr. Dwight B. Murray, board chairman. Dr. Walter B. Martin, president of the A.M.A., presented the medal and citation to Dr. Pace, immediately after the announcement, on the rostrum before the House of Delegates.

Other highlights of the opening session were addresses by Dr. Martin; Mr. Seaborn P. Collins, National Commander of the American Le-

gion; Mrs. Oveta Culp Hobby, Secretary of Health Education and Welfare, and Mr. Edwin J. Faulkner, President of the Woodman Accident and Life Company of Lincoln, Neb.

Mr. Collins told the House that he is willing to appoint qualified Legion representatives on a committee to take part in joint Legion-A.M.A. study of veterans' hospitalization. Later during the meeting the Board of Trustees announced appointment of a three-man committee to meet with the Legion on the issue of veterans' medical care. The members of the A.M.A. committee are Dr. Elmer Hess, Dr. David Allman and Dr. Louis Orr.

New A.M.A. Geriatrics Unit

The House of Delegates passed a Pennsylvania resolution which directed that the A.M.A. Board of Trustees "consider the creation of an organization on geriatrics within the present structure of American Medical Association, the purpose of which shall be (1) to develop and assist committees on geriatrics and gerontology originating from constituent state associations and component county societies of the American Medical Association; (2) to act as a liaison between such state and county committees so there shall be a free flow of information between all levels of organized medicine on the subject of geriatrics; (3) to make available to the American people such facts, data and opinions concerning the subject of geriatrics as may be considered of value in alleviating social and medical problems created by the increasing population of older age groups; and (4) to perform such other duties as will improve and advance the medical care rendered to people of the older age group."

Medical Ethics

Accepting a recommendation in a report of the Council on Constitution and Bylaws, the House amended Section 7 of Chapter I of the Principles of Medical Ethics so that it now reads as follows on the subject of patents and copyrights:

"A physician may patent surgical instruments, appliances and medicines or copyright publications, methods and procedures. The use of such patents or copyrights or the receipt of

remuneration from them which retards or inhibits research or restricts the benefits derivable therefrom is unethical."

In another action involving medical ethics, the House rejected a Kansas resolution which would have removed Section 8 of Chapter I from the Principles of Medical Ethics. The Reference Committee on Miscellaneous, Business, in recommending disapproval of the resolution, said that "the American Medical Association would fail to assume a vital responsibility if no provision is included in the Principles of Medical Ethics regarding the problem of ownership of drug stores and dispensing of drugs by physicians . . . It is possible that some phases of this principle are susceptible of amendment or change, but certainly the entire principle should not be discarded."

Report on Internships

Acting on the report of the Ad Hoc Committee on Internships, the House accepted a recommendation of the Reference Committee on Medical Education and Hospitals that "the data and judgments of the Ad Hoc Committee on Internships will provide valuable guidance to the Council on Medical Education and Hospitals and with this in view it is recommended that the report be referred to the latter for their further study and guidance." Following are a few excerpts from the report of the Ad Hoc Committee on Internships:

"It is our opinion that graduates of foreign medical schools should be considered for intern appointment in approved hospitals only when there is satisfactory evidence that:

"1. Language difficulties will not seriously impair the program.

"2. The same educational standards are applied to graduates of foreign schools as to graduates of approved American medical colleges.

"3. The appropriate state licensing board approves . . .

"The Committee believes that the present standards detailing only the number of annual admissions, autopsy rate, number of beds and assignment of an intern to from 15 to 25 beds, are without significant meaning unless and until every local situation is reviewed 'on the grounds' and with full opportunity for discussion between the representative of the accrediting body and representatives of the hospital's governing board and its medical staff . . .

"Had the 'two-thirds rule' remained a re-

quirement and been rigidly applied to the two consecutive intern years 1952-3 in combination with 1953-4 it would have removed 448 hospitals, cancelled 4,205 internships to which 784 students were matched in those years and reduced the number of internships available to 6,766 . . .

"The committee suggests consideration of some requirements based on filling a percentage of approved internships and a time limit to eliminate some of the unhealthy aspects of the present situation. The following requirement is recommended: Any internship program which in two successive years does not obtain one-fourth of its stated intern complement be disapproved for internship training.

"As applied to the figures for 1952-3 in combination with 1953-4, this requirement would have removed 277 hospitals, cancelled 2,139 internships to which 80 students were matched in those years and reduced the number of internships available to 8,832."

Grievance Committees

In order to improve efficiency and maintain high standards in the operation of grievance or mediation committees, the House endorsed the principles of two similar resolutions introduced by the Colorado and Mississippi delegations and asked the Board of Trustees to appoint a committee to study and report on recommended standards for the operation of such services. Both resolutions had emphasized the valuable public service aspects of grievance committees and had suggested that the committee appointed by the Board of Trustees be composed of representatives from constituent societies in which grievance committees have been effective and useful.

Hospital Accreditation

In place of an Indiana resolution protesting certain situations arising in connection with hospital inspections, the House adopted the following substitute resolution to resolve the problems in question:

"Resolved, that the Secretary of the American Medical Association be directed to request that the Joint Commission on the Accreditation of Hospitals supply a copy of the letter of notification regarding the results of the survey of each hospital to the Hospital Administrator, to the Chief of the Professional Staff and to the Chairman of the Governing Board of the hospital."

Osteopathy

The House concurred in the following supplementary report of the Board of Trustees on the osteopathic situation:

"Contingent on the receipt of the report from the Committee to Study the Relations Between Osteopathy and Medicine of its 'on campus' observations of osteopathic schools, the House of Delegates in June, 1954, agreed to hold in abeyance any action on this important subject until this meeting.

"The Committee, after meetings and extensive negotiations with the American Osteopathic Association, has now made final arrangements for visiting five of the six schools of osteopathy, and these plans have been approved by the Board of Trustees.

"It is the recommendation of the Board, therefore, that consideration of this matter be held in abeyance by the House of Delegates until the June, 1955, meeting, at which time the Committee expects to have a complete report of its findings concerning the nature, scope and quality of education in schools of osteopathy."

The Doctor Draft Law

The Reference Committee on Medical Military Affairs considered several reports and resolutions involving the doctor draft law, and then proposed the following statement which was adopted by the House of Delegates:

"(A) That on the basis of current information the House of Delegates commend and express itself as being in complete accord with the Board of Trustees and its Council on National Defense that the 'Doctor Draft Law' should not be extended after June 30, 1955, and that the House of Delegates further express its confidence in the ability of the Board of Trustees and its Council on National Defense to properly handle any new situation which may develop in regard to this highly complex and involved problem.

"(B) That the Board of Trustees and its Council on National Defense continue to study the problem of providing the best possible medical service for members of the armed forces and that they make recommendations to the Department of Defense at the earliest possible time for a more permanent solution to the problem, giving special attention to the further development of a career medical corps with adequate compensation therefor."

State-Subsidized Medicine

Most controversial issue at the Miami meeting was a resolution on "Policy on Medical Practice by Tax Supported Medical Schools," introduced by the Mississippi State Medical Association. This resolution provided that:

"The American Medical Association reaffirms its unalterable opposition to socialized and state subsidized medicine regardless of the form which it may assume, and

"The House of Delegates of the American Medical Association is of the opinion that these principles should be considered by constituent and component medical societies together with all other facts pertinent to the local situation in all controversies arising in the employment of medical faculty by state (tax) supported medical schools and be fully considered in effecting action within the framework of this policy."

The Reference Committee on Medical Education and Hospitals agreed with that portion of the resolution regarding "unalterable opposition to socialized medicine" but recommended that the resolution be referred, without approval or disapproval at this time, to the Council on Medical Service which currently is studying the various aspects of this subject. The House adopted the reference committee's recommendation.

Malpractice Insurance

Two resolutions and a Board of Trustees supplementary report — all dealing with the problems and difficulties in obtaining satisfactory professional liability insurance — were considered together by the Reference Committee on Insurance and Medical Service. The House of Delegates accepted the reference committee report which said: "Inasmuch as the Board of Trustees has reported that there is in progress a study on the subject, we feel that we can well await the recommendations that the Board is planning to make at the next sessions. Due to the apparent emergency aspect of the problem, the Board of Trustees is urged to report to the membership as soon as possible, through its component societies, on the progress of this urgent study."

Opening Session

Dr. Walter B. Martin, A.M.A. President, declared at the opening session that "medicine belongs to the people" and physicians are "merely the purveyors" of medical care. Dr. Martin stressed that physicians have an obligation to

the people that "goes beyond our own private practice and into the community," and he also emphasized the importance of "continued effort to meet the medical needs of the low-income and other non-insurable groups."

Mr. Collins, the American Legion National Commander, said that "we are citizens first and doctors and veterans second," as he urged removal of the veterans' medical care issue "from the area of namecalling and propaganda." The American Legion, he declared, neither expects nor wants the government to give carte blanche entitlement to medical care to all veterans.

Mrs. Hobby, presenting the case for the Eisenhower Administration's health reinsurance proposal, said: "The health reinsurance proposal represents what we believe to be a necessity. It offers opportunity for self-help without subsidy." Mr. Faulkner, however, expressed the opinion that the reinsurance program, "would be foredoomed to disappoint its proponents," and he declared that voluntary health insurance can bring satisfactory protection "to practically all of our people" without a Federal reinsurance program.

Awards and Contributions

At the closing session of the House of Dele-

gates the American Medical Association received a citation for pioneering in helping to bring educational television to the American public. James Keller, chairman of the Miami Citizens Committee for Educational Television, presented the award on behalf of the National Citizens Committee for Educational Television. Dr. Martin accepted the citation for the A.M.A.

At the same session the Utah State Medical Society, represented by Dr. George M. Fister of Ogden, presented a check for \$10,355 to the American Medical Education Foundation to aid in relieving the financial plight of the nation's medical schools. The contribution was received by Dr. Louis H. Bauer, president of the foundation, who also announced that a check for \$1,000 had been contributed by the Southern Medical Association.

1957 Clinical Meeting

Philadelphia was chosen as the place for the 1957 Clinical Meeting, the dates of which will be announced later. Invitations also had been received from Denver, Detroit, Mexico City and Washington, D.C. The Clinical Meeting will be held in Boston in 1955 and in Seattle in 1956.

Respectfully submitted,
J. D. Hamer, M.D.
Delegate

Relax the best way ... pause for Coke



**Time out for
refreshment**



ANNUAL MEETING— SCIENTIFIC SESSIONS

THE 64th Annual Meeting of your Association will be held in Tucson, May 4-7, 1955, with headquarters at El Conquistador Hotel. Through arrangements made by the Scientific Assembly Committee, we are happy to announce participation of the following two guest orators who will appear with others on the scientific sessions program.

S. F. HAMPTON, M.D.

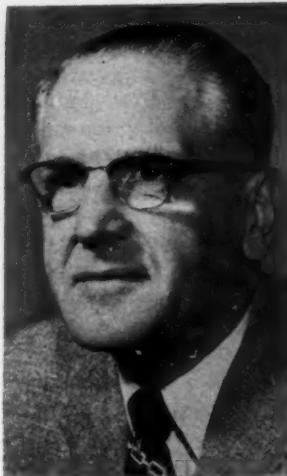


Stanley F. Hampton, M.D.
St. Louis, Missouri

Assistant Professor of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri, Doctor Stanley F. Hampton is president of the American Academy of Allergy, 1955-56; Director of the Washington University Allergy Clinic; member of the Board of Trustees of the American Foundation for Allergic Diseases; consultant in

allergy to the Surgeon General of the United States Air Force; and Diplomat of the American Board of Internal Medicine and the Sub-Board of Allergy. Doctor Hampton will also be guest of the Arizona Society of Allergy.

G. C. GRIFFITH, M.D.



George Cupp Griffith, M.D.
Los Angeles, California

Graduate of the Jefferson Medical College in 1926, interning at Presbyterian Hospital, Philadelphia 1926-28, preceptee, Graduate School of Medicine, Philadelphia 1929-33, and attending Harvard Postgraduate School of Medicine 1931-33, Doctor George Cupp Griffith was assistant professor of cardiology, Graduate Hospital, Philadelphia, 1929-46; Clin-

ical professor of medicine, University of Southern California, 1946-50; Professor of medicine, cardiology, University of Southern California, 1950 to date. During the years 1928 to 1950 he received many important appointments including the institutions Presbyterian Hospital, Graduate Hospital, Babies Hospital, Woman's Hospital, Douglas Hospital, all of Philadelphia; Home for Incurables, Philadelphia; Los Angeles County Hospital, Birmingham VA Hospital, San Antonio Community Hospital, Good Hope Hospital Association, St. Luke Hospital, Long Beach VA Hospital, Huntington Memorial Hospital, Good Samaritan Hospital, all of California; Trustee, Juniata College, Huntington, Pennsylvania; Medical advisor to the Pennsylvania Railroad; Civilian expert to the Surgeon General, McCornack Hospital, California; Consultant in Rheumatic Fever, Board of Public Health, State of California; Consultant, State of California Department of Public Education, Bureau of Rehabilitation; Member of the Board of Consultant Editors, Journal of Insurance Medicine; Chairman of the Health and Hospital Committee, Pasadena Chamber of Commerce; President, California Heart Association; and member of the Editorial Board of the Journal of American Geriatrics Society. Doctor Griffith is also a member of a large number of medical societies and associations.

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Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

THE AMERICAN NATIONAL RED CROSS, Pacific Area Office, 1550 Sutter Street, San Francisco 1, California, Maricopa County Chapter, 329 North 3rd Avenue, Phoenix, Arizona.

Safety instructors for swimming classes for the physically handicapped persons are available through this agency. The Maricopa County Chapter reports the scheduling of one of such programs. Swimming classes for the physically handicapped persons are being given at the Boy's Club, 1652 East Moreland on Monday and Wednesday mornings from ten to eleven A.M. Recommendation to this page from the above group is to the effect that more handicapped persons than are currently availing themselves can be accommodated.

Anyone interested in joining the classes must have their physician's permission, following which they are asked to contact their local chapter.

State-wide swimming classes for the physically handicapped, then, are a part of the American National Red Cross program. The pattern is set in Maricopa County and physicians and others of the populous areas of the state desiring such classes for their handicapped patients should contact their local Red Cross Chapter.

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 Arizona Title Building, Phoenix, Arizona. (Easter Seal Society)

State laws provide for the education of the home-bound child and, at the election of the Boards of Education of the high schools in the state, for the education of the home-bound high school youth. The Easter Seal Society recognizing the added particular needs of these students in the Phoenix area has manned the Samuel Compers Memorial Easter Seal Clinic.

The Samuel Compers Memorial Easter Seal Clinic located at 7211 North 7th Street is contained in a building where floor space approximates 7,000 square feet. This building was built by the men and women of the American Federation of Labor and is owned by the Maricopa County Society for Crippled Children and

Adults, Inc. Education and therapeutic care is under their direction with delegated authority of the educational program given by the Public School system and conducted by the director of the clinic.

The clinic is interested in all types of physically handicapped persons where therapeutic treatment can lead to improvement and added independence. As an example of the diversity of the program, the clinic is now serving individuals who are cerebral palsy, post-polio, muscular dystrophy, multiple sclerosis and congenital handicap cases. It is the policy of the clinic and of those who are the professional members of the staff to give the best service that they can within the limits of their capabilities to all physically handicapped people. It may be that much can be done or it may be that the prognosis for the future is not bright. Whatever the case may be, an honest and thorough evaluation will be made of each case referred to the clinic and in-patient or out-patient treatment will be given or recommendations for home training in therapy will be provided.

The therapy areas include a program of physical rehabilitation in physical therapy, speech therapy, and manual arts therapy. All areas are under the direction of the clinic and all therapy is given as directed by examination and referrals of members of the medical profession. Out-patient clinics are held regularly and referrals for evaluation and possible therapeutic treatment are made at that time. Referrals can be made to the clinic by any qualified physician or by any qualified agency where treatment of a particular case is deemed to be necessary.

Admission to the clinic is decided after a complete evaluation of the patient has been realized. This includes the medical evaluation, evaluations by the physical therapist, the manual arts therapist and the speech therapist as well as the psychologist and the educational system. Following the examinations, admittance of the individual for either in-patient or out-patient treatment is decided upon by an admissions

committee made up of the professional staff of the clinic.

In all instances therapeutic treatment is carried over to the school program and also into the home situation. This is true for all patients whether they are in the school program or are seen only on an out-patient basis.

In many instances the handicapped individual may come in for an evaluation and recommended home care or treatment. In this way many more handicapped children or adults can be seen and by periodic returns to the clinic for a check on the progress of the individual the home treatment can be guided and help can be given to many where they might otherwise receive no therapeutic care whatsoever.

State-wide referrals will be given as much consideration as time, facilities and scheduling permit. Any questions regarding provisions, policy, or facilities may be directed to David B. Ray, Executive Director of the Arizona Society for Crippled Children and Adults, 208 Arizona Title Building, or to Dr. LeRoy Larson, Ph.D., Director, Samuel Compers Memorial Easter Seal Clinic, 7211 North 7th Street, Phoenix, Arizona.

* * *

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 718 Security Building, Phoenix, Arizona.

"SPECIALIZED EQUIPMENT GRANT MADE TO ST. JOSEPH'S HOSPITAL". Apparatus specifically designed for the Cerebral Palsied is being delivered to St. Joseph's Hospital Department of Physical Medicine and Rehabilitation through a special grant of funds approved by the executive committee of the Central Arizona United Cerebral Palsy Association at its meeting November 30 in the Kiva Club, announced the president, Fred N. Porter, Jr.

Included in the equipment which will be publicly presented on delivery are an adjustable crawler, foot placement ladder, adjustable relaxation chair with attachments, standing table, gait training skis, as well as children's parallel bars and a child size walker. Total cost of the equipment will be in the neighborhood of \$400.

SPEECH SURVEY BEING CONDUCTED AT VALLEY OF THE SUN SCHOOL, Miss Sharon Heins, speech consultant, who recently moved to the Phoenix area, is conducting a speech evaluation survey at the Valley of the

Sun School for Handicapped Children, under the auspices of the United Cerebral Palsy Association of Central Arizona.

The evaluation will be carried out in each individual case of a Cerebral Palsied Child to not only determine present speech and hearing abilities or disabilities, but will also serve as a guide to future treatment possibilities and estimated costs involved.

Stimulated by United Cerebral Palsy's initial survey, the School is also conducting speech surveys through Miss Heins of other children not falling in the Cerebral Palsy categories. Funds for these additional evaluations will come from other agencies, as well as civic, fraternal and social groups.

Valley of the Sun School presently has an enrollment of eighteen Cerebral Palsy children, and if their building campaign is successful, facilities should be expanded to enable double the present number. Special equipment for the Cerebral Palsied has been donated in the past by United Cerebral Palsy of Central Arizona.

Should Miss Heins' survey indicate substantial need for speech therapy, United Cerebral Palsy Association plans to employ her services in that direction on a fee-treatment basis for the children. Her services will also be available for the ambulatory out-patient children who can be referred to the Valley of the Sun School for treatment.

* * *

"To what purpose other than salaries is my charity dollar put by your agency?"

The explanation as to the percentage of distribution of funds at the National, State, and local level has not answered this question. This page for this month points out results of the volunteer service agency dollar in local areas.

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ARIZONA *Pharmaceutical* PAGE

KILL A MONSTER AND CREATE A MENACE

By Joseph A. Zapotocky, Ph.D. College of Pharmacy, University of Arizona

THIS may serve as a grotesque explanation of the side action of some of our modern therapeutic agents.

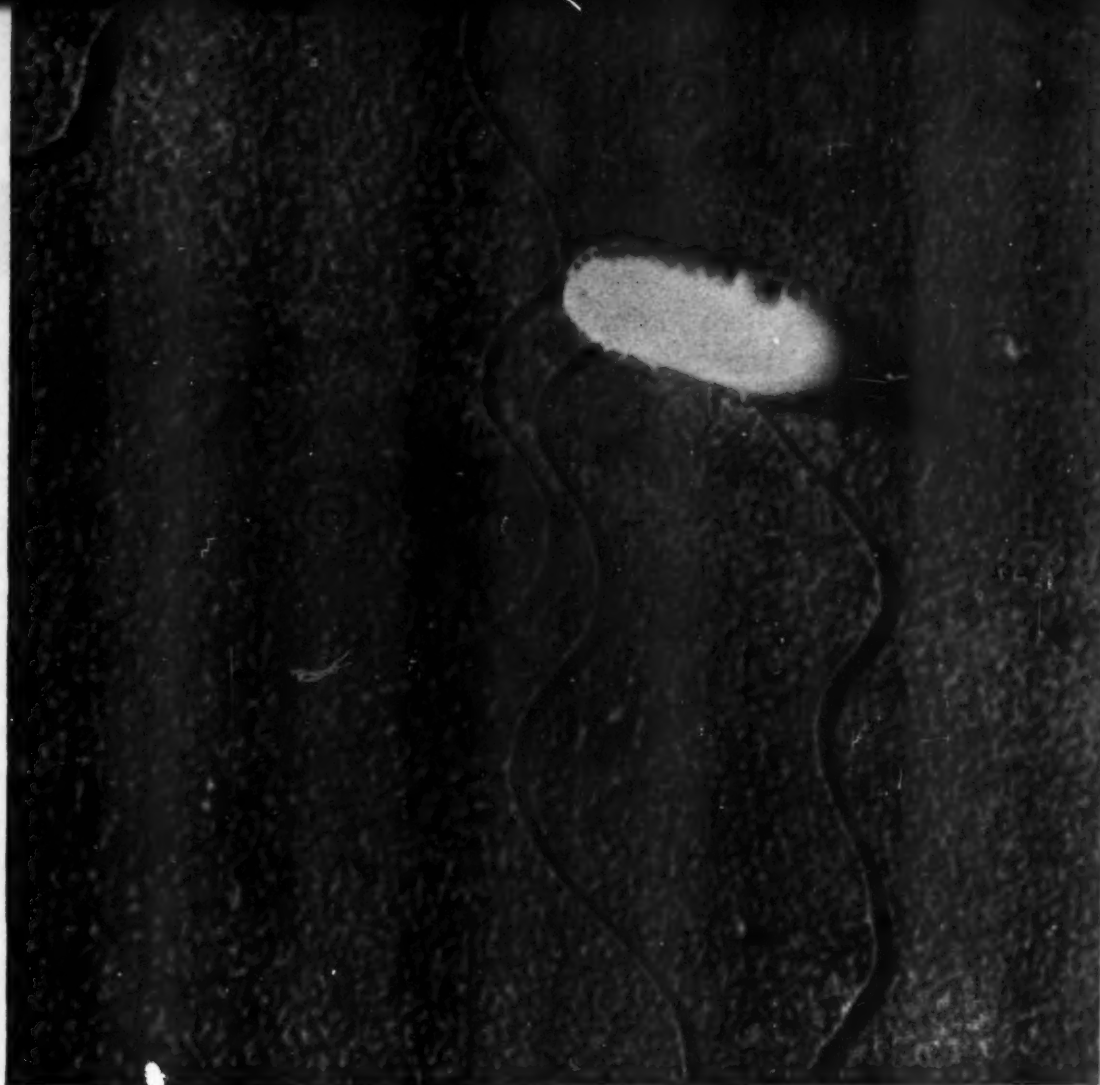
Life on earth is a complex system of checks and balances. Other than the usual environmental factors, one organism may keep another from becoming too abundant. Bacteria, fungi, insects, and higher animals all tend to curb the activities of one another. Therefore, it is not surprising, when something happens to destroy the pattern of balance, one group may flourish until some means is found to bring it under control.

Antibiotics have tamed many of our killer diseases. Since the discovery of penicillin, antibiotic after antibiotic has been put on the market, each considered to have a certain range of action and advantages over some preceding discovery. Idiosyncrasies have also become more prevalent. The development of bacterial resistance has become more common. The incidence of resistance seems to increase with the greater use and popularity of each antibiotic. The incidence of bacterial resistance to penicillin is very high today.

The antagonism and synergism of antibiotics, and the cross resistance of organisms to antibiotics have been studied in some detail. Although there appears to be some pattern of activity, there are a sufficient number of variations to make relying on a set pattern dangerous. No set rule can be followed safely.

An unusual development in antibiotic therapy is the problem of the overgrowth of one class of organisms when another group is suppressed. A similar problem is met as a result of the widespread use of insecticides. The spraying of large areas with an insecticide brings about the destruction of a number of susceptible pests. Invariably this followed by an overgrowth of the pests which were held in check by the presence of the destroyed group. A new problem of control develops. The occurrence of similar problems following antibiotic therapy is becoming more prevalent. The overgrowth of fungi following destruction of bacteria has resulted in the need for simultaneous administration of methyl and propyl parahydroxybenzoates with some antibiotics. The overgrowth of micrococci following the administration of broad spectrum antibiotics may necessitate the use of a second antibiotic. The use of a predominantly gram positive killer such as penicillin may cause the bacterial flora to become mostly gram negative. More serious infections of internal organs are resulting from organisms which usually infected only the oral cavity of the respiratory organs. Likewise, these areas are becoming infected with organisms which previously localized in the intestines. Vitamin B deficiencies are known to occur from the destruction of organisms normally found in the body.

The selection of the proper antibiotic is becoming more complex. The choice should not be left to chance. A poor selection may cause the development of organisms more resistant to future treatment by the proper agent because the initial treatment may have served to act as a growth stimulant. Strains of organisms vary in their susceptibility to antibiotics. Unless a preliminary sensitivity test is carried out beforehand, the correct choice may be impossible to determine. Two testing methods used today are the tube dilution and disc plate methods. The latter although considered less accurate, is cheaper and much easier to perform. Both delay the administration of the medication by 18 to 24 hours. However, when it is considered that an improper choice of an antibiotic may produce beneficial or possible deleterious results, the use of such a test seems advisable. Diagnostic test tablets are available. These can be used to determine bacterial sensitivity both qualitatively and quantitatively. Single or multiple combinations of therapeutic agents may be tested for bacterial sensitivity. The proper choice and the proper concentration of the agent can be selected. A product meeting the needs of each case can then be prepared and made available to the patient.



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Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

CARCINOMA OF THE BREAST. — Carl J. Antonellis, *The West Va. Med. Journ.* July 1954. This author stresses some points quite frequently overlooked. One of the most important is that there are two lymphatic plexuses draining the breast and these drain four ways, laterally to the axillary nodes, above to the subclavian nodes, medially to the internal mammary nodes and down into the extraperitoneal nodes. When axillary metastasis is present, **one-third** of these will have metastases to the internal mammary nodes, and will not be cured by however thorough a removal of breast and axillary tissue is carried out. In many respects this is an excellent article on a very common condition.

BERYLLIUM. We have heard of the man who could not see the forest because of the trees. In Arizona, Silicosis is very likely to hide from us the possibility of other forms of pneumonococcosis, such as that produced by beryllium. In *Industrial Medicine and Surgery* for July, 1954, a group of investigators, headed by Director Joseph Shilen, report on an engineering study of ten years on "Beryllium Extraction, Reduction, and Alloy Fabrication." The section on medical findings will be found interesting. They conclude that processing of beryllium can be done with the same degree of protection as that used in processing any other metal. While beryllium poisoning has been a compensable occupational disease in Pennsylvania for three years, no claims for such compensation had been filed with the company at whose plant this study was made, up to the time of writing this report.

PAIN PROBLEMS OF THE NECK, SHOULDER GIRDLE, AND UPPER EXTREMITY. Article by Judovich and Novel, Department of Neurology, Univ. of Penna., *The Journal-Lancet*, July, 1954. Few practitioners of general medicine will get through a week without seeing at least one patient, with this problem. The discussion in this article is fairly detailed and presents some new ideas, and a new effective method of administering neck traction. "A clinical concept is offered which has been found to be of value in the interpretation of the subjective and objective manifestations of somatic pain."

THE PRACTICE OF MEDICINE. *British Medical Journal*, July 10, 1954. This is the scholarly President's Address before the 122nd annual meeting of the British Medical Association, by Sir. John McNee, M.D., D.Sc., LL.D., F.R.C.P.,

F.R.F.P.S., Emeritus Regius Professor of Practice of Medicine, University of Glasgow. Attempt to epitomize this would be useless. It needs to be read in its entirety by scholarly minded seekers after literary enjoyment. Two brief quotations should arouse interest in any one who chances to read this comment. "Thus both the old study of the natural history of disease and the new scientific discoveries and methods of the past fifty years must be carefully blended for the benefit of our patients, but in **their correct order.**" There is caustic criticism of the type of doctor who, when faced with a sick patient, decides to put him on some antibiotic for three days and if he does not get well by then, to examine him.

RADIOTHERAPY FOR RODENT ULCER. Churchill-Davidson and Johnson, *British Med. Journ.*, June 26, 1954. An interesting report on results of treatment of 711 lesions treated by radiotherapy, mainly x-ray, over a period of eleven years. A three year cure rate of 95.7% and a five year cure rate of 92.6%. Seven cases of radionecrosis resulted, one acute ascribed to idiosyncrasy; six late cases, developing from six months to three and a half years after treatment, three of which had to be excised. Radium was used in only eight cases, the remainder by varying voltages of x-ray.

THE TREATMENT OF COMPLICATIONS OF FRACTURES OF THE NECK OF THE FEMUR. Carroll B. Larson, Iowa City, Ia., *Journ. of the Iowa State Med. Soc.*, July, 1953.

This brief and well illustrated article outlines the different methods of treating "non-union and aseptic necrosis in intracapsular fractures."

PULMONARY TUBERCULOSIS TREATMENT. Use of Isoniazide and Iproniazide. Cohen and Ang present a rather comprehensive report and discussion of the use of these drugs on 76 patients. They conclude that iproniazide is not advocated at present in the therapy of the average case of pulmonary tuberculosis because of its toxicity. Their treatments usually extended over 90 days and worked up to 4.0 mgm. per kilo of body weight as a daily dose. The discussion is quite detailed with tabulations of results in various types of involvement. Article is found in *Diseases of the Chest* for June, 1954.

LOW SERUM SODIUM. Maurice B. Strauss, M.D., Prof. of Clinical Medicine, Boston University School of Medicine.

"A knowledge of the role of sodium in health and disease has become a matter of practical importance for every clinician." Read about it in *The Boston Medical Quarterly*, June, 1953.

RECENT TECHNICAL ADVANCES, a 2 minute Abstract

ANTI-STREPTOLYSIN-O TITRE

PRINCIPLE:

An antibody, (antistreptolysin-O) is elaborated in the body by the immunological response of the organism to infection by group A streptococci, and is measured by its ability to inhibit hemolysis by the specific antigen, streptolysin.

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An aid in the diagnosis, therapy and management of Streptococcus Hemolyticus infections, and as an index of activity or progress of Acute Rheumatic Fever, Endocarditis, or Glomerulonephritis.

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Notes from the EDITORS' PEN

ANNUAL MEETINGS

64th Annual Meeting of YOUR Association will be held in Tucson, May 4 through 7, 1955, at Hotel El Conquistador. Make reservations NOW by writing direct to the hotel and plan to attend.

Annual meeting of the American Medical Association will be held in Atlantic City, New Jersey, June 6 through 10, 1955.

AMERICAN MEDICAL EDUCATION FOUNDATION

As of November 1, 1954, the AMEF has received 15,800 contributions totaling \$1,023,313.26, compared with 15,414 gifts totaling \$960,859 during the same period in 1953. Grants of the National Fund for Medical Education disbursed to the nation's 80 approved medical schools in July, 1954, totaled \$2,176,904.71. Of this total, the medical profession provided \$1,101,578.31 through AMEF.

The Fourth Annual Meeting of AMEF state chairmen is scheduled to be held in Chicago, Sunday, January 23, 1955. Our chairman, Doctor Harold W. Kohl of Tucson, plans to attend.

19TH EDITION — AMA MEDICAL DIRECTORY

The new, 19th Edition, AMERICAN MEDICAL DIRECTORY is now in galley form, and it is expected that the book will be ready for delivery by the American Medical Association about the middle of 1955. Most important to each of us is the prompt mailing to AMA of the **Directory Information Card** previously forwarded to each medical doctor. Needless to say, this Directory has wide circulation and daily use by all medical interests. It is the "WHO'S WHO" listing of our profession. It behooves each of us to see to it that the listing is correct in every detail and as we, individually, wish the record to indicate. Supplying the information requested by card will eliminate all future criticism. AMA wants to do a perfect job. Your cooperation to this end will assure its success. MAIL YOUR CARD TODAY, if you have not already done so.

MEDICAL STATISTICS

(1) Medical fees have not risen as fast as the consumer's price index. (2) Personal consumer's expenditures for medical care continue to be a little more than four per cent of all family personal consumer expenditures. (3) Physicians' incomes on the average have increased since 1929 at almost precisely the same percentage rate as the incomes of all gainfully employed people, their patients. (4) An estimate of the full cost of medical education training is 35 to 50 thousand dollars.

KNOW YOUR DELEGATES

Members of the House of Delegates of your Association are composed of delegates elected by each of the fourteen component county medical societies. During December and January most societies will have completed such elections. The House of Delegates and Council represent the "voice" in the administration of the affairs of your Association. KNOW YOUR DELEGATES and express your views to them in order that they may be guided by your wishes during the forthcoming 64th Annual Meeting of The Arizona Medical Association, Inc., in Tucson, with headquarters at El Conquistador, May 4 through 7, 1955.

CIVIL DEFENSE

The Federal Civil Defense Administration now has medical supplies valued at \$91 million delivered to sixteen warehouses strategically located across the country. An additional \$39 million is on order.

An improvised hospital, an adaptation of the Mobile Army Surgical Hospital unit used in Korea, possibly is the most significant advance. For federal reserve, 731 such units are in line for procurement. A total of 93 are on order, states providing one-half the cost. Present planning calls for 6000, states procuring 1000 and the balance for federal reserve.

A ten day course on "Medical Care of Atomic Casualties" is being scheduled at the Army Medical Service Graduate School (Walter Reed Army Medical Center), Washington, D. C., January 10-19, 1955 and March 7-16, 1955. The course is free, travel and lodging expenses to be borne by attendant. Physician participation invited.

RADIOLOGICAL SOCIETY MEETING

The 42nd annual meeting of the Texas Radiological Society will be held in Houston, Texas, Friday and Saturday, January 21-22, 1955, with headquarters at the Shamrock Hotel. Guest speakers will include: Philip J. Hodes, M. D. of Philadelphia; Thomas A. Watson, M. B., Ch. B., D. M. R. of Saskatoon, Saskatchewan, Dominion of Canada; Henry G. Moehring, M. D. of Duluth; William B. Seaman, M. D. of St. Louis; and Richard Schatzki, M. D. of Belmont Massachusetts.

DO YOU KNOW?

That the 80 medical schools in the United States will operate on a budget of approximately \$93,408,312 during the fiscal year 1954-55.

That to operate the federal government medical, health and related activities during the fiscal

year 1954-55, approximately 25 times as much money is required, or approximately \$2,141,681,661. This represents one-sixth of the total United States health bill (12 billion dollars) as estimated by the Department of Commerce.

That according to data supplied by the Veterans Administration in June, 1954, on the one-day census method, 62.4 percent were being treated for non-service-connected disabilities or 84.3 percent of the patients discharged in 1952 were non-service-connected disability cases.

THREE PHOENIX DOCTORS HONORED

Three Phoenix doctors, Howard C. Lawrence, John J. McLoone, and Alvin L. Swenson have been inducted as Fellows of the American College of Surgeons, the Maricopa County Medical Society reported.

Of the 1,100 surgeons given this distinction for 1954, Drs. Lawrence, McLoone, and Swenson were the only three from Maricopa County.

Dr. Lawrence, with offices in the Professional Building, is a graduate of the University of Michigan Medical School. He is a member of the American Society of Plastic and Reconstructive Surgery, and the American Society of Cleft Palate Rehabilitation.

He has practiced medicine in Phoenix since 1949 and is a member of the board of directors of the Maricopa County Medical Society.

Dr. McLoone, whose office is at 550 W. Thomas, is a graduate of George Washington

Medical School. He is a native Phoenician and a member of the American Board of Otolaryngology. He is an eye, ear, nose, and throat specialist.

Dr. Swenson, of 1313 N. Second St., is a graduate of Harvard Medical School. He is a member both of the American Academy of Orthopedic Surgeons and the Western Orthopedic Association. He has practiced in Phoenix since 1948.

MEETING NOTICES

Twenty-sixth annual meeting Aero Medical Association March 21-23, 1955, Hotel Statler, Washington, D. C.

Conference on Reserpine In The Treatment of Neuropsychiatric, Neurological, and Related Clinical Problems. Held by the New York Academy of Sciences, Section of Biology, February 3 and 4, 1955 (Thurs. and Fri.) The Barbizon-Plaza Hotel, N. Y., N. Y.

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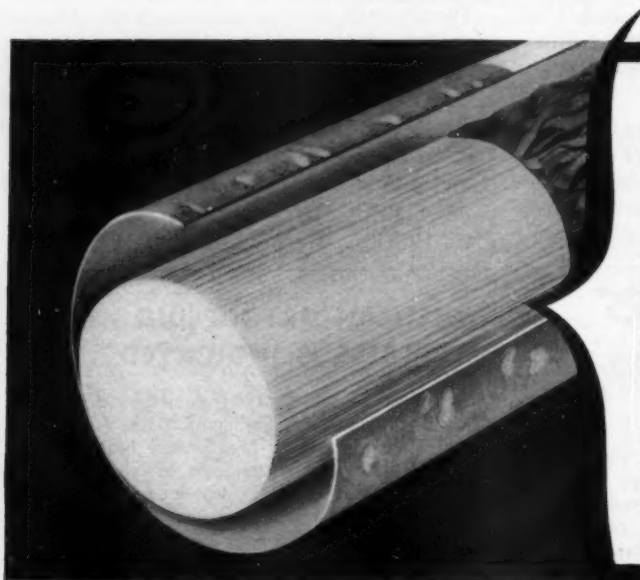
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NOT ARTHRITIS BUT ARTHRALGIA...

If the patient complaining of aching joints is a woman between 37 and 54 years of age, it is highly possible that she is suffering from arthralgia rather than arthritis.¹ It has been estimated that arthralgia occurs in about 40 per cent of women with estrogen deficiency, and is exceeded in frequency only by symptoms of emotional or vasomotor origin.² In fact, arthralgia may be as indicative of declining ovarian function as the classic menopausal hot flushes.

Arthralgia, however, is just one of a vast number of distressing but ill-defined symptoms that may be precipitated by the loss of estrogen as a "metabolic regulator." Other good examples are insomnia, headache, easy fatigability, and tachypnea.

Because these symptoms sometimes occur years before or even long after cessation of menstruation, they are not always readily associated with estrogen deficiency, and the tendency may be to treat them with medications other than estrogen. Obviously, sedatives and other palliatives cannot be expected to produce a satisfactory response if an estrogen deficiency exists. Only estrogen replacement therapy will correct the basic cause of the disorder.

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1. Greenblatt, R. B., and Kupperman, H. S.: *M. Clin. North America* 30:576 (May) 1946. 2. McCavack, T. H., in Goldzieher, M. A., and Goldzieher, J. W.: *Endocrine Treatment in General Practice*, New York, Springer Publishing Company, Inc., 1953, p. 223.

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WHEN WRITING ADVERTISERS PLEASE MENTION THIS JOURNAL

Woman's AUXILIARY



Mrs. Roy Hewitt
Tucson, Arizona

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION ELEVENTH ANNUAL CONFERENCE

THE Eleventh Annual Conference of State Presidents and Presidents-elect was held November 16, 17 and 18, 1954, at the Drake Hotel in Chicago, with representatives from forty-six states present. The Arizona Auxiliary was represented by State President Mrs. Brick Storts, National Historian Mrs. Jesse Hamer, and State President-elect Mrs. Roy Hewitt.

Mrs. George Turner of El Paso, National President, opened the conference with words of welcome. National board members, past national presidents and the president of the Southern Medical Auxiliary were introduced. President-elect Mrs. Mason G. Lawson, the presiding officer, in her opening speech explained the theme of the conference, *Leadership in Community Health*. For thirty years the auxiliary has been preparing members for leadership in every field pertaining to community health. It is our obligation as doctors' wives, she said, to be leaders in our own community. In this way we help to further good public relations between the medical profession and the community. Mrs. Lawson also pointed out that this conference was

a workshop, helping members to be better informed about the program and policies of all phases of auxiliary work, and providing an exchange of ideas from all state auxiliaries.

Mrs. Turner, in her president's report, urged members to participate in the following national health projects:

I. *National Foundation for Infantile Paralysis*. Over 1,830,000 children participated in the University of Michigan's study of the Salk polio vaccine test in 1954. If the vaccine is to be licensed in the spring of 1955, a long-term, intensive program of public education must be developed to expedite its application and use. The National Foundation has arranged for production of enough vaccine to assure the availability next spring of 9,000,000 vaccinations if the vaccine is proved to be effective, Mrs. Turner stated. The Foundation will supply vaccine free of charge to all individuals in the following groups:

- A. All children who participated in the 1954 field trials, but who did not receive vaccine;
- B. The nation's children in the first grade next spring;
- C. Pregnant women.

It is essential that every group assist in this life-saving program, Mrs. Turner said.

II. *The Crusade for Freedom* sponsored by the Heritage Foundation is a name given to action by all western people, to defend and preserve the decent things of life and even to preserve life itself. The crusade has three branches, the National Committee for Free Europe, Radio Free Europe, and the American People themselves.

Mrs. Turner was one of the eleven women sent to Free Europe. These women traveled 12,626 miles, assisting in the educational aspects of the Crusade for Freedom. In Berlin, Mrs. Turner presented a CARE package in the name of The Woman's Auxiliary to the A.M.A. The American people can show by their deeds that the way of the free men is best. Auxiliaries can assist by participating in educational programs, by helping in fund-raising activities and by sending CARE packages to Europe.

III. *National Safety Council*. Members can participate in this health program by serving on safety council boards, by aiding educational

programs, and by promoting safety exhibits at state and county fairs.

In closing, Mrs. Turner urged all members to work on a community level, but to focus our eyes on the world, for the eyes of the world are on us.

PUBLIC RELATIONS PANEL

Several public relations programs being sponsored by the American Medical Association were explained by Dr. Ernest B. Howard, Assistant Secretary to the A.M.A. Hope was expressed that a "Public Opinion Survey" would soon be approved by the Board of Trustees. What the attitude of the American public is toward their country, state and national societies and toward their private physician, is very important. The Doctors should know what America is thinking.

A project to develop closed television programs to doctors and medical students is a new procedure in post-graduate study, Dr. Howard stated. This project is only in the talking stage as yet. A live T.V. program "The Doctor Answers" is conducted in Chicago every day by Dr. Bauer. Ciba Laboratory sponsors a T.V. show in medical research, which has nation-wide coverage in institutional teaching.

Dr. Howard said that twenty-six articles of preventive medicine approved by the A.M.A. have been published in the magazine *This Week*.

Program Panel

"A Family Doctor for Every Doctor's Family" is a program sponsored in several states. Too many doctors today are lost because of preventable illness. Although industrial groups have yearly checkups, many doctors' families go without medical care.

Traffic and home safety programs are vital to the Auxiliary. Last year there were ninety-eight thousand accidental deaths. Of these casualties twenty-eight thousand were in the home. Between thirty and fifty thousand children each year are crippled or handicapped in some way. Auxiliary members can help educate communities by arranging for special safety programs to be given, emphasizing the following three basic principles of home safety. Make home conditions safe, avoid unnecessary dangers and observe the laws and ordinances explicitly.

Members were urged to organize baby-sitting clinics in every community. Special instruction in child care should be given, such as child

handling, bathing and dressing, as well as child feeding. In many high schools, clubs have been organized for giving this instruction. It was recommended that study groups should include teen-agers, older women, and new grandmothers.

Dr. W. W. Bauer, Director, Bureau of Health Education, complimented the Woman's Auxiliary on their participation in the school health programs. He stated the school health programs were established in 1911 by the American Medical Association in conjunction with the National Educational Association. There was also an increasing wave of interest in the health of the school age child during the year 1945-46, resulting in establishment of educational clinics throughout the United States.

Mr. Thomas Hendricks, Secretary of the Council on Medical Service, A.M.A., spoke on *The Essentials of Excellence*. He emphasized the fact that medical service is the product we have to sell, and that the art of public relations is based upon how well the product is sold. Leadership in community health through community team spirit is the key to the best health programs he maintained. Ignorance in action is the most tragic thing in the world, he declared. In order to reach the standard of excellence in selling the idea of medical service to the public, we must be informed.

ORGANIZATION PANEL

Mrs. Robert Flanders, First Vice-President and Chairman, Organization Committee, conducted this panel. Every auxiliary member should feel that she is a member of the organization committee. In order to get new members everyone needs to be enthusiastic, to make personal contacts, and to provide a varied and interesting program. After all, organization is the foundation of the Woman's Auxiliary to the American Medical Association, Mrs. Flanders maintained.

Although Arizona has no medical school, members might be interested to know that medical students had organized the Student American Medical Association. This association is four years old, they edit their own journal, and are self-supporting. Many schools have auxiliaries to this association, it was added.

PUBLICATIONS

Education is the primary objective in publications. Members need to have authentic information and to know the principles for which the Auxiliary stands, in order to be leaders in community health. A study of the *Bulletin* prepares

members for such leadership. The Auxiliary is a national organization. The *Bulletin* is the official magazine.

The American Medical Association spends thousands of dollars sending publications to the doctors to keep them informed and up-to-date in policies. Some of these publications are "The Secretary's Letter", "The Washington Letter", (legislation), The *A.M.A. Journal* and the specialty journals.

Today's Health is the only authentic health magazine. It is published by the American Medical Association. The public is hungry for information about health. Use *Today's Health* for a textbook.

The National Fund for Medical Education and the American Medical Education Foundation are closely associated organizations dedicated to raising funds on a national scale from voluntary sources for the support of the medical schools. The National Fund for Medical Education secures contributions from corporations and other organized groups. The American Medical Education Foundation raises funds from individuals, physicians and medical groups. Monies raised by the Foundation are merged with those of the National Fund for distribution to medical schools. The A.M.A. approves of federal grants for construction of medical schools and for specific research projects, but does not approve of government subsidy money for operating expenses. Such subsidies could lead to government control of all medical education. The A.M.E.F. needs two million dollars this year to carry out this support for medical schools. Last year the Woman's Auxiliary to the American Medical Association gave \$50,000. Members are urged as a group to surpass this figure this year. Suggestions for fund-raising projects are rummage and white elephant sales, dances and bazaars. The use of memorial cards should be encouraged among the membership. Choose a project and work on it. It's up to every member.

The *World Medical Association* was organized in 1947 to represent the practicing medical and allied professions throughout the world. Its aims are to raise the standards of medical education and public health, and to help to improve industrial and occupational health programs in all countries. The *World Medical Association* is also the spokesman of the medical profession at meetings of international organizations, such as the United Nations, which ordin-

arily receive only opinions of governments. Today the *World Association* comprises forty-six national associations. As established, the Association receives dues paid by member associations. By 1948, when headquarters were established in the United States, it became obvious that funds from this source would be insufficient. The United States Committee is responsible for the support of the headquarters, and for certain expenses of the Council. Individual memberships in this committee are available at \$10.00. No one group or individual can represent American medicine except the *World Medical Association*. Therefore membership should be encouraged on a local level, it was stated.

Public Relations Panel

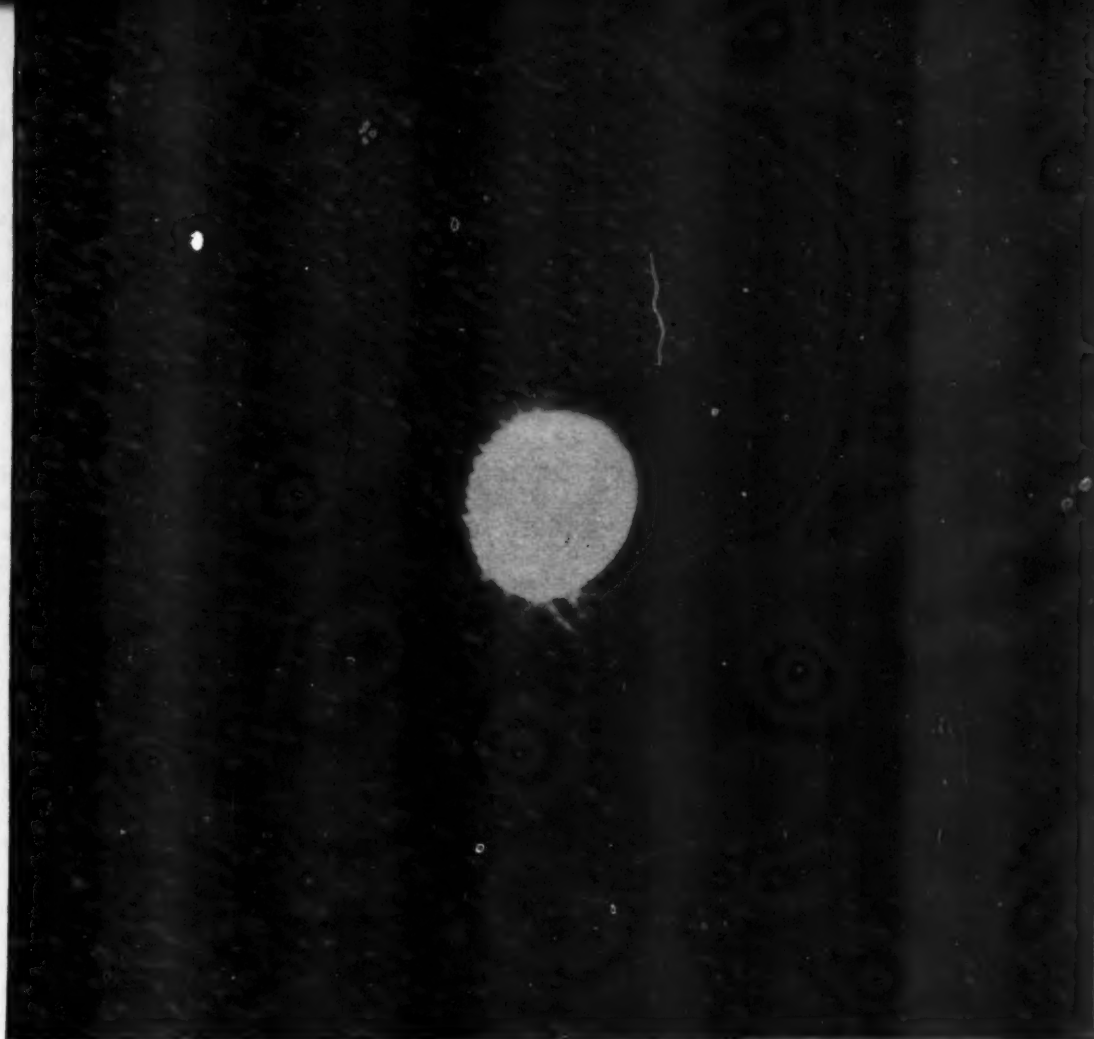
According to Mr. Leo Brown, Director of Public Relations, A.M.A., health forums are an excellent way of furthering good public relations in the community. These forums must first be approved by the county or state medical society. The auxiliaries must not take the initiative, he stated.

Auxiliary members can aid the doctors by interesting other groups in participating in this project by suggesting good moderators for T.V. health shows, and by taking charge of the placement service for the speakers' bureau.

The cooperation of local daily papers aids in the promotion and advertising of the health forum. In contacting the physicians, the press becomes better acquainted with the doctors' problems and better informed on the subjects under discussion. Because these forums are straight health ventures, advertising in newspapers, on the radio and on television is given the approval of the American Medical Association. The health forum functions as a major health service.

Mr. Aubry Gates, Field Director of Rural Health, urged members to work together with home demonstration agents and 4-H clubs in educating rural people in medical care. Inform rural people what health facilities are available and how to use them to the best advantage. Urge them to have a family physician and to have an annual checkup. One of the great problems of farm people is heart disease caused by overweight. Courses in nutrition can guide and encourage these people. Since each community has different problems, programs should be on a local level.

The Legislative Panel conducted by Mrs.



ELECTRON PHOTOMICROGRAPH

Staphylococcus aureus 44,000 X

Staphylococcus aureus (*Micrococcus pyogenes* var. *aureus*) is a Gram-positive organism commonly involved in a great variety of pathologic conditions, including

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Upjohn

Charles L. Goodhand, National Chairman, furnished one of the most interesting discussions at the conference.

The Health Reinsurance proposal which was defeated in the last session of Congress, will surely be resubmitted this year. The A.M.A. opposes reinsurance on the grounds that voluntary health insurance is still growing at a phenomenal rate without government intervention. The need for such intervention had not been shown, and the bill did nothing to help individuals, not insurable, at this time.

Use of study groups is thought to be the most effective in educating the community in States and National legislation. If auxiliary members are informed about health legislation, we can then discuss it intelligently in our social contacts.

Mr. Joseph Stedler, Director of the A.M.A. law department, stated that during the two sessions of the 83rd Congress, there were 16,000 bills and resolutions introduced, and out of these 5,000 were enacted into law. Four hundred and seventy-five of these bills were of interest to the medical profession; three-hundred and fifty of these were studied by the A.M.A. committee on legislation in Washington. There were nineteen primary health bills passed by the 83rd Congress, thirteen of which were enacted into law. The A.M.A. favored eleven of these bills opposed three, and took no action on the remaining.

Bills which will surely come before this Congress and which should be studied are: (1) The Bricker Amendment, (2) Reinsurance, (3) Social Security, (4) Veterans' affairs, and (5) Military Dependent Medical Care. Members should inform themselves and be ready to write or wire their congressmen in order to effectively express their opinions in the best interests of the medical profession.

Topics discussed on the *Civil Defense* panel were "Home Nursing for Defense", "Home Preparedness for Disaster", "Mass Dispersal", and "Rural America, a Vital Part of Civil Defense".

Again, auxiliary members were asked to serve as leaders in community health. The experts, of course, are the first line of defense. The Civil Defense program can be simple, but we must know how to do whatever is necessary in case of disaster. Prevention is the best known tool. Members were urged to have closer coordination between state and national chairmen.

Mental Health Panel

Mrs. Brick Storts participated on this panel by giving a two-minute talk on Juvenile Delinquency. She pointed out that the delinquency of these misguided young people was the result of family disorganization.

Dr. Richard Plunkett, Secretary of the Mental Health Committee of the A.M.A., spoke about the important role the teacher has in the mental hygiene of children today. The average American child has a respect for his teacher that borders on reverence. This fact places a tremendous responsibility upon the teacher. Her encouraging response makes the youngster happy, and acts as an incentive to achievement. A negative reaction on the part of the teacher brings insecurity and frustration causing the child to seek relief in misbehavior or in negative effort. The vast majority of our school teachers possess a wholesome understanding of the child, but there are some who remain indifferent, he stated.

In dealing with the many underlying factors of child growth and development, doctors face problems which may be traced to classroom difficulties, in many instances.

Parents, P.T.A. groups, and auxiliary members can play a big part in stimulating teachers toward continuous development. The profession of teaching should be made so appealing, that the guidance of children in the schools would become a privilege.

Nurse Recruitment continues to be one of the biggest projects of the Woman's Auxiliary, it was stated. Suggestions for the recruitment of nurses depend upon the community and its needs. Many nursing schools are now open to men and women for training of practical nurses. Students must be eighteen and over, and need only two years of high school credits. Clinical work, serving in children's institutions, and assisting in the home are some of the positions open for this type of nursing.

Reports on revisions to the Constitution and By-Laws, on Auxiliary Finances, on functions of the Reference Committee and on Records, will be published in the January issue of the *Bulletin*.

On the last day of the conference, a tour was made of the A.M.A. Headquarters. Two films, "A Life to Save" and "Nurse Please" were shown. Dr. George F. Lull, Secretary and General Manager of the A.M.A. offered greetings and urged members to tell the doctors at home of the many

services that are offered by their American Medical Association.

Mrs. Roy Hewitt
State President-Elect

MARICOPA COUNTY CHILD GUIDANCE CLINIC

IN recognition of their work and leadership in helping establish the Maricopa County Child Guidance Clinic awards for 'distinguished public service' were presented to Mrs. Robert Cummings and Mrs. John Eisenbeiss at the December meeting of the Maricopa County Medical Society.

Members of the County Medical Society and Woman's Auxiliary along with other organizations contributed both time and money toward the establishment of the clinic which opened November 15.

A check for \$28,050.00, raised mostly through the doctor's contributions, was presented to the clinic by the Auxiliary.

Both award winners have served key positions in the mental health program: Mrs. Eisenbeiss as secretary-treasurer of the Mental Health Association and secretary of the Child Guidance Clinic; Mrs. Cummings as chairman of the clinic board.

Children with mental, emotional and psychiatric problems are referred to the clinic by the juvenile court, welfare services and schools. Minimum fees are based on ability to pay, but lack of funds does not exclude a child from clinical care. Dr. Robert Barrett is directing psychiatrist.

At the request of the Community Council, a committee headed by Rabbi Krohn investigated the need for a mental health organization in Maricopa County. As a result of this survey, the Mental Health Association was formed and the Child Guidance Clinic was adopted as its first project.

Serving on the advisory board of the Child Guidance Clinic are Mr. Keith Perkins, Dr. Thornton E. Pfeil, Dr. Derrill Manley, and Dr. Otto Bendheim. Members of the referral examining group are Dr. John McLoone, Dr. John S. Aiello, and Dr. Manley.

Book REVIEWS

REVIEWS of the following books will be published in the near future:

THIS PACE IS NOT KILLING US by J. I. Rodale. Rodale Press. Emmaus, Pennsylvania. 1954. Price \$1.00.

WHEN MINDS GO WRONG by John Maurice Grimes, M.D. The Devin-Adair Co., New York. 1954 (Revised and enlarged from author's original edition which was privately printed in 1951.) Price \$3.50.

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The following letters are published at request of Council for the information of the members and also as further acknowledgment of their receipt. All colleges concerned are members of the Western Regional Compact on Higher Education. Ed.

December 7, 1954

Re: Council Meeting Nov. 21, 1954

R. Lee Foster, M. D.

507 Professional Bldg.

Phoenix, Arizona

Dear Doctor Foster:

Council, at a meeting held November 21, 1954, received letters from three medical schools which are members of the Western Regional Compact on Higher Education. It was the wish of Council by motion duly made and carried unanimously, that these letters be published in Arizona Medicine Journal.

Attached please find copies of correspondence from the University of Colorado, University of Utah and the University of Oregon medical schools.

Cordially,

The Arizona Medical Association Inc.
D. W. Melick, M.D., Secretary

DWM:EJG

Enclosures

UNIVERSITY OF COLORADO

Department of Medicine

4200 East Ninth Avenue

Denver 20, Colorado

August 10, 1954

Arizona Medical Society

Phoenix

Arizona

Gentlemen:

I was pleased indeed to learn from a report of the American Medical Education Foundation that you have designated the University of Colorado School of Medicine as the recipient of your contribution to the Foundation.

We are very appreciative of your interest in the School of Medicine as evinced by this support, and we extend to you our sincere thanks.

Sincerely yours,

A. R. Buchanan, M.D.

Assistant Dean

ARB:bw

UNIVERSITY OF UTAH

College of Medicine Salt Lake City

August 24, 1954

Oscar W. Thoeny, President,

Arizona Medical Association

c/o D. W. Melick, Secretary

541 Security Building

Phoenix, Arizona

Dear President Thoeny:

I wish to express to you the deep appreciation of this College of Medicine for the helpful contribution of the Arizona Medical Association to our program. I know that you share my feelings that the preparation of well-trained phy-

sicians is a most important part of our national program, and at this date the great restriction lies in the funds for such programs.

The fact that the money which you have given through the American Medical Education Foundation is without a designating label for the type of expense, makes it particularly helpful. Our funds from the State must be specifically designated at the beginning of the year and so-called "fluid funds" are badly needed.

I understand also that in this contribution, you are endeavoring to strengthen regional aspects of medical education. You may be interested to know that in the past three years, this Medical School has been increasingly interested in the admission of students from Arizona and we hope that in the future, the number will grow steadily.

With all good wishes,

Yours Sincerely,

John Z. Bowers, M. D.

Dean

JZB:jmt

UNIVERSITY OF OREGON MEDICAL
SCHOOL

Portland 1, Oregon

Office of the Dean

August 25, 1954

Dr. Oscar W. Thoeny, President

Arizona Medical Association, Inc.

1313 N. Second Street

Phoenix, Arizona

Dear Doctor Thoeny:

In the absence of Dean Baird, who is on vacation, I am writing to express our sincere appreciation for the grant which you have made to the American Medical Education Foundation and which has been earmarked for the University of Oregon Medical School. We consider this to be an extremely generous action on the part of the Arizona Medical Association, and indicates that your Association is anxious to help in meeting the financial problems faced by the medical schools of this area.

We would appreciate it if you would convey our thanks to the members of the Association.

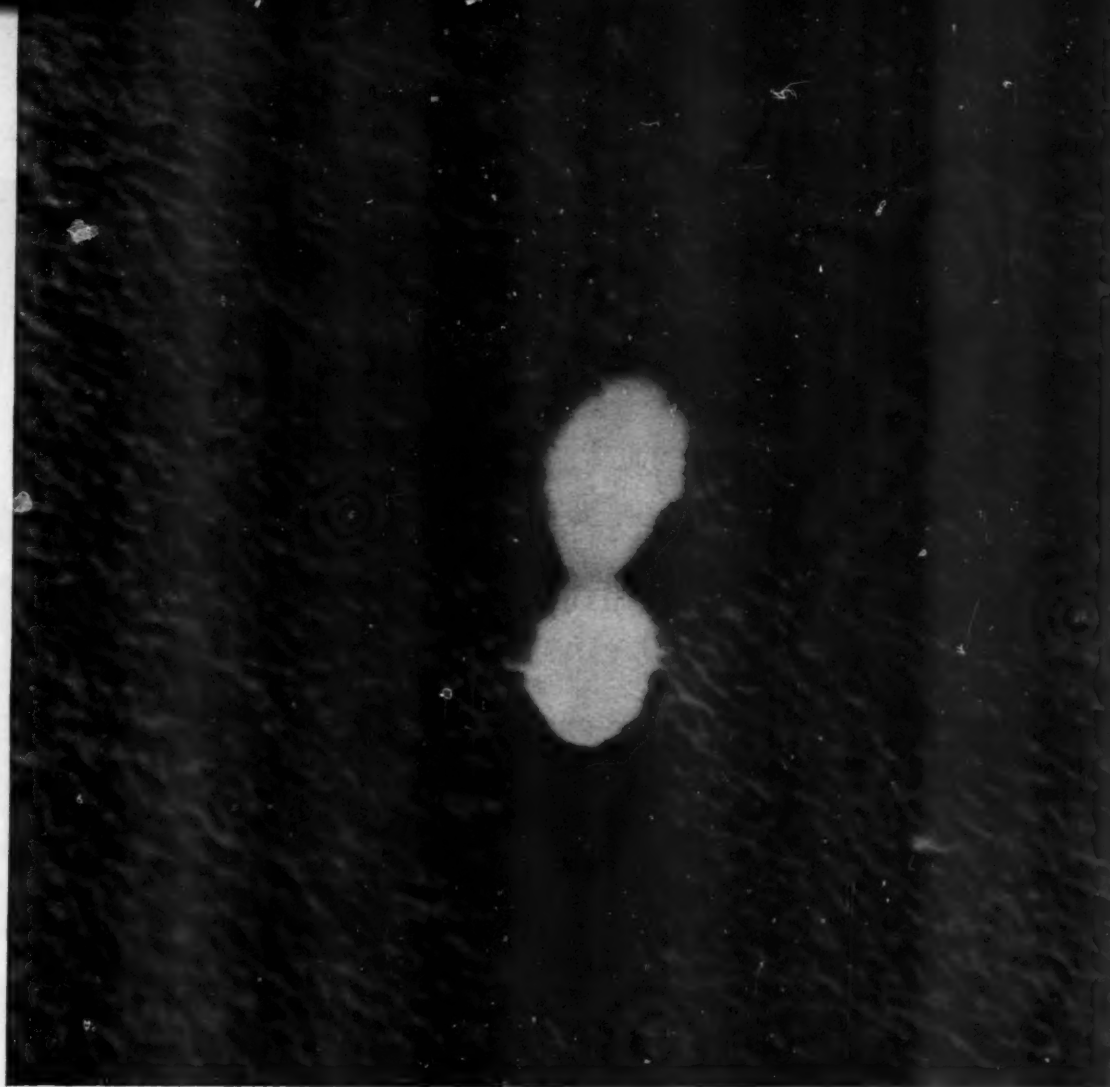
You will be interested to know that this fall we are accepting one student from Arizona under the Western Regional Pact for Higher Education. We hope that in the future it will be possible to admit additional students from Arizona.

Very truly yours,

W. A. Zimmerman

Assistant to the Dean

WAZ:bc



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John W. Kennedy, M.D., Radiologist

W. Warner Watkins, M.D., Radiologist

Diplomates of American Board of Radiology

Lorel A. Stapley, M.D., Consultant Pathologist

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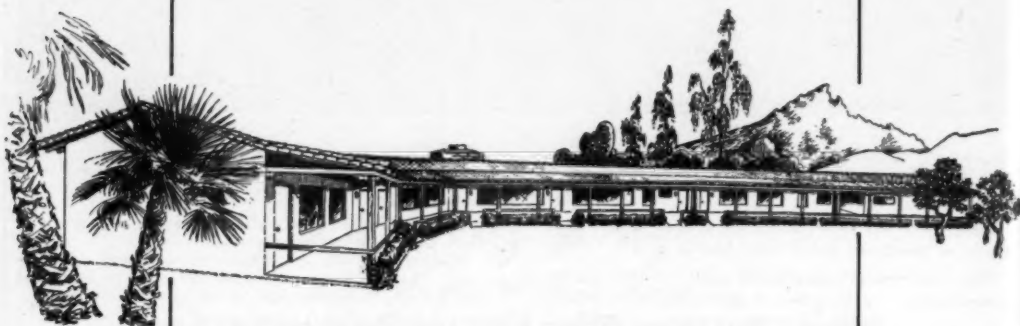
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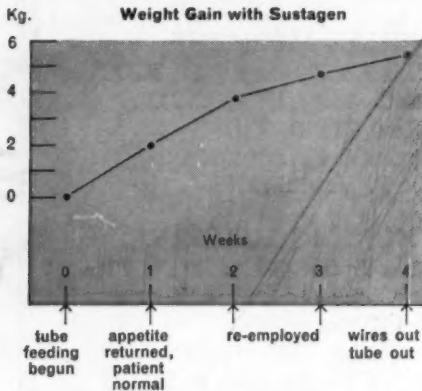
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